

Systematic study of multi-quark states I. $qq - qq - \bar{q}$ configuration

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Abstract

Group theoretic method for the systematic study of multi-quark states is developed. The calculation of matrix elements of many-body Hamiltonian is simplified by transforming the physical bases (quark cluster bases) to symmetry bases (group chain classified bases), where the fractional parentage expansion method can be used. Five-quark system is taken as an example in this study. The Jaffe-Wilczek $qq - qq - \bar{q}$ configuration is chosen as one of examples to construct the physical bases and the transformation coefficients between physical bases and symmetry ones are shown to be related to the $SU_{mn} \supset SU_m \times SU_n$ isoscalar factors and a complete transformation coefficients table is given. The needed isoscalar factors and fractional parentage coefficients had been calculated with our new group representation theory and published before. Three quark models: the naive Glashow-Isgur, Salamanca and quark delocalization color screening, are used to show the general applicability of the new multi-quark calculation method and general results of constituent quark models for five-quark states are given.

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I. INTRODUCTION

Hadron (baryons and mesons) spectroscopy opens the gate for the development of the fundamental theory of the strong interaction: quantum chromodynamics (QCD). However the non-perturbative complication of low energy QCD makes it impossible to calculate the hadron structure analytically from QCD directly. The unique color structure of the known hadrons makes the construction of quark models very efficient (Fig.1). A variety of quark models employing two-body interactions give a good description of hadron properties. (For baryon, the three-body interaction can be well approximated by two-body interaction.) However the unique color structure also limits our understanding of the properties of other color structures available in QCD. In order to understand low energy QCD, to study system with more quarks is indispensable. Hadron-hadron scattering provides a window on the nature of other color structures, but it is not enough because the colorless meson exchange model and chiral perturbation theory both describe the low energy hadron-hadron scattering data well. QCD does not rule out the existence of glueballs, quark-gluon hybrids, multi-quark states, *etc.* based on the present understanding. Multi-quark systems are important samples for providing information on low energy QCD interaction, especially for complex color structures (Fig.2).

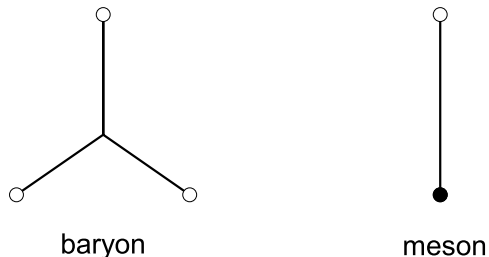


Fig.1 The color structure of baryons and mesons.

Since 1977, interest in multi-quark systems has continued although there have been rising and falling. The search for the H-particle (6-quark system), which was predicted in 1977 by R. Jaffe [1] with MIT bag model, has not succeeded for almost 30 years. In 1993, the dibaryon state d' appeared unexpectedly [2], observed in double charge exchange reactions but disappeared nine years later. Other six quark states, $:d^*$ [3], $N\Omega$ [4] and $\Omega\Omega$ [5] *etc.*, had been proposed but none of them has been established experimentally. In 2003, the

pentaquark state, Θ^+ , aroused a new enthusiasm in multi-quark systems. More than ten groups claimed that they observed the Θ^+ signal, but almost the same number of groups did not [6, 7]. Its appearance had raised great trouble for theory of hadron spectroscopy, almost none of the models constrained by hadron properties and hadron-hadron scattering can account for the Θ^+ [8, 9]. In studying pentaquark Θ^+ , various color and spatial structures of pentaquark had been proposed: color singlet hadron molecules $[K(q\bar{q})N(q^3)]$, color anti-triplet diquarks $[(qq)(qq)\bar{q}]$ [10], diquark-triquark $[qq - qq\bar{q}]$ [11], quark methane $[q^4\bar{q}]$ [12], *etc.* However recent high statistic experiments did not confirm the Θ^+ signal [13]. Today, about three years later, pentaquark Θ^+ seems to be about to disappear also.

After the pentaquark Θ^+ (a member of anti-decuplet), other states in 27-plet and 35-plet [14, 15, 16], had been proposed. In order to understand the nucleon spin structure within constituent quark model the five-quark component is necessary [17]. Recently to explain the strange magnetic moment of proton, five-quark component was introduced in the nucleon [18].

Tetra-quark states are re-interested both experimentally and theoretically because of new discoveries since 2003 [19].

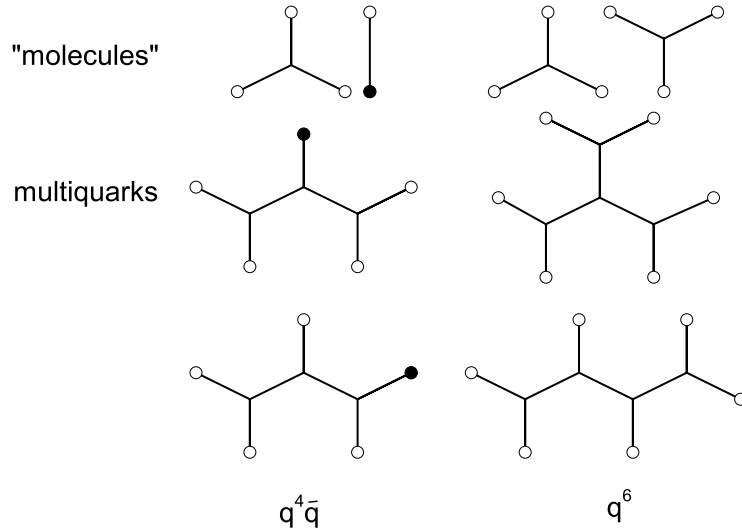


Fig.2 The color structure of multi-quark states.

Fig.2 shows possible color structures for 5- and 6-quark systems based on the lattice QCD calculation [20] and general color confinement idea. Clearly they have more possible

color structures than 2- and 3-quark hadrons. Due to color confinement, only color singlet combinations of quarks can be separated. Colorful clusters will be confined in a genuine multi-quark system. It will transit to color singlet sub-systems through color flux rearrangement first then decay. This will induces resonance similar to compound nucleus formation but due to color confinement and could be called color confinement resonance. To include these intermediate hidden color configurations in the quark model, a multi-channel coupling calculation with multi-body interactions is required. This is quite involved [21] and finding a method to make the calculation tractable is an important element in the study of multi-quark systems with constituent quark models. Moreover up to now we almost don't have any idea about the transition interaction between different color configurations. To develop model to include effects of these hidden color configurations is expected.

The group theory classification of 4, 5 and 6 quark states had been published [16, 22, 23]. The fractional parentage (fp) expansion technique has been proven as a powerful method for few-body problem. To full play the powerful group theoretic method for quark model calculation one needs not only the fractional parentage expansion coefficients of these multi quark states but also a relation between various quark model states (hereafter called physical bases) and the group theoretical classification states (hereafter called symmetry bases). Such a method has been developed and successfully applied in systematic search of dibaryon [23, 24, 25], where the physical bases were transformed to symmetry bases first, then the 6-body matrix elements calculation of Hamiltonian (with two body interaction) on the symmetry bases was done which can be reduced to four-body overlap and two-body matrix elements calculation by means of fractional parentage expansion. At last the matrix elements on the symmetry bases were transformed back to physical bases.

The main content of this paper is to provide the transformation coefficients between physical bases and symmetry bases of five-quark systems to facilitate the calculation of many-body Hamiltonian matrix elements. The physical bases discussed in this paper is the Jaffe-Wilczek diquark model ones. Another useful physical bases is the meson-baryon bases which will be given in a company paper. To illustrate the application of this group theory method for five-quark systems three quark models were employed for pentaquark calculation. They are the naive quark model, i.e., the Glashow-Isgur model [26]; the Salamanca chiral quark model [27] and the quark delocalization color screening model (QDCSM) developed by our group [28]. The calculation of the related fractional parentage coefficients will be

mentioned but the needed results have been published elsewhere [29, 30].

In section II, the physical bases and symmetry bases are introduced and the transformation between them is derived. The fractional parentage technique applied to calculate the matrix elements on the symmetry bases is also explained in this section. Section III explains three quark models we used. The results of the systematic calculation of pentaquark in the u, d, s 3-flavor world are given in section IV. The last section gives the summary.

II. PHYSICAL BASES AND SYMMETRY BASES

The physical bases are constructed as follows, first the wave function of each quark cluster was constructed based on the group chain classification

$$SU_{36} \supset SU_2^x \times \left\{ SU_{18} \supset SU_3^c \times \left[SU_6 \supset \left(SU_3^f \supset SU_2^\tau \times U_1^Y \right) \times SU_2^\sigma \right] \right\},$$

then the quark cluster wave functions of the system was coupled to definite color, spin and isospin quantum numbers by Clebsch-Gordan (CG) coefficients of color SU_3^c , spin SU_2^σ and isospin SU_2^τ group, and finally anti-symmetrized.

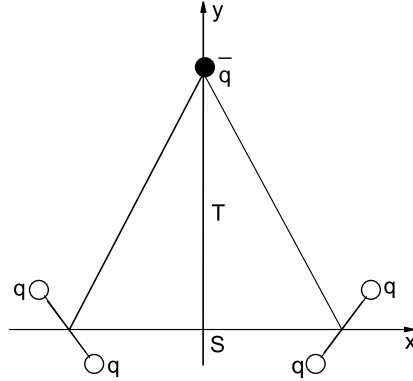


Fig.3 The Jaffe-Wilczek configuration of pentaquark.

For Jaffe-Wilczek di-quark configuration, the five quarks are separated into three clusters and form an isosceles triangle with the two strongly correlated pairs of quarks sitting at the bottom corners with separation S and the anti-quark at top with the height T (see Fig.3). The di-quark in the u, d, s three-flavor world is described by

$$\psi_2(q^2) = \left| \begin{array}{c} [\nu_2] W_{\nu_2} \\ [c_2] W_{c_2} [\mu_2] [f_2] Y_2 I_2 M_{I_2} J_2 M_{J_2} \end{array} \right\rangle \quad (1)$$

which is the basis vector belonging to the irreducible representations ($n = 2$)

$$\begin{array}{cccccccc} [1^n] & [\nu] & [\tilde{\nu}] & [c] & [\mu] & [f] & I & Y & J \\ \text{SU}_{36} \supset \text{SU}_2^x \times \left\{ \text{SU}_{18} \supset \text{SU}_3^c \times \left[\text{SU}_6 \supset \left(\text{SU}_3^f \supset \text{SU}_2^\tau \times \text{U}_1^Y \right) \times \text{SU}_2^\sigma \right] \right\} \end{array} \quad (2)$$

where $[\nu]$, W , *etc.* are the Young diagrams, Weyl tableaux, *etc.* describing the permutation and SU_n symmetries. In our calculation, the ground state diquarks are assumed to be in the totally symmetric orbital state $[\nu_2] = [2]$. The cluster basis for 4-quark can be defined as

$$\Psi_{\alpha_4 k_4}(q^4) = \mathcal{A} [\psi_2(q_1 q_2) \psi_2(q_3 q_4)]_{W_{c_4} M_{I_4} M_{J_4}}^{[c_4] I_4 J_4}, \quad (3)$$

where \mathcal{A} is a normalized antisymmetric operator for 4-quark, $[]$ means coupling in terms of the SU_3^c , SU_2^τ , SU_2^σ CG coefficients so that it has color symmetry $[c_4]W_{c_4}$, isospin $I_4 M_{I_4}$, and spin $J_4 M_{J_4}$. $\alpha_4 = (Y_4 I_4 J_4)$, k_4 represents the quantum numbers $\nu_2, \nu'_2, c_2, \dots, J'_2$. The cluster basis for 5-quark can be obtained by coupling the antiquark basis to 4-quark basis in terms of the SU_3^c , SU_2^τ , SU_2^σ CG coefficients,

$$\Psi_{\alpha k}(q^4 \bar{q}) = [\Psi_{\alpha_4 k_4}(q^4) \psi_{[\bar{c}] \bar{I} \bar{J}}(\bar{q}_5)]_{W M_I M_J}^{[c] I J}. \quad (4)$$

The symmetry basis of 4-quark system is just the group chain (Eq.(2)) classification basis ($n = 4$),

$$\Phi_{\alpha_4 K_4}(q^4) = \left| \begin{array}{c} [\nu_4] W_{\nu_4} \\ [c_4] W_{c_4} [\mu_4] [f_4] Y_4 I_4 M_{I_4} J_4 M_{J_4} \end{array} \right\rangle, \quad (5)$$

where K_4 stands for $\nu_4 \mu_4 f_4$. Similar to Eq.(4), the symmetry bases for 5-quark is

$$\Phi_{\alpha K}(q^4 \bar{q}) = [\Phi_{\alpha_4 K_4}(q^4) \psi_{[\bar{c}] \bar{I} \bar{J}}(\bar{q}_5)]_{W M_I M_J}^{[c] I J}. \quad (6)$$

The cluster bases and symmetry bases for 5-quark can be transformed to each other [23, 24, 31, 32].

$$\begin{aligned} \Psi_{\alpha k}(q^4 \bar{q}) &= \sum_K C_{kK} \Phi_{\alpha K}(q^4 \bar{q}) \\ &= \sum_{\tilde{\nu}_4 \mu_4 f_4} C_{[\tilde{\nu}_2][c_2][\mu_2], [\tilde{\nu}'_2][c'_2][\mu'_2]}^{[\tilde{\nu}_4][c_4][\mu_4]} C_{[\mu_2][f_2][J_2], [\mu'_2][f'_2][J'_2]}^{[\mu_4][f_4][J_4]} C_{[f_2]Y_2 I_2, [f'_2]Y'_2 I'_2}^{[f_4]Y_4 I_4} \Phi_{\alpha K}(q^4 \bar{q}), \end{aligned} \quad (7)$$

C 's are the isoscalar factors of $SU_{mn} \supset SU_m \times SU_n$, which can be obtained from the book [30]. All the transformation coefficients are listed in the appendix.

A physical 5-quark state with quantum number $\alpha = (YIJ)$ is expressed as a channel coupling wave function

$$\Psi_\alpha(q^4\bar{q}) = \sum_k C_k \Psi_{\alpha k}(q^4\bar{q}). \quad (8)$$

The channel coupling coefficient C_k is determined by the diagonalization of the 5-quark Hamiltonian as usual. The calculation of Hamiltonian matrix elements in the cluster bases is tedious and it can be replaced by the matrix elements in the symmetry bases by the transformation Eq.(7),

$$\langle \Psi_{\alpha k} | H | \Psi_{\alpha k'} \rangle = \sum_{K, K'} C_{kK} C_{k'K'} \langle \Phi_{\alpha K}(q^4\bar{q}) | H | \Phi_{\alpha K'}(q^4\bar{q}) \rangle. \quad (9)$$

In the symmetry bases, the matrix elements $\langle \Phi_{\alpha K} | H | \Phi_{\alpha K'} \rangle$ can be calculated by the well known fp expansion method. Because there is an antiquark, we have to use different fp expansion for qq interaction and $q\bar{q}$ interaction. For qq interaction, $4 \rightarrow 2 + 2$ is used.

$$\begin{aligned} \langle \Phi_{\alpha K} | H_{34} | \Phi_{\alpha K'} \rangle &= \sum_{1,2} C_{[1^2][\nu_1][\bar{\nu}_1], [1^2][\nu_2][\bar{\nu}_2]}^{[1^4][\nu_4][\bar{\nu}_4]} C_{[\bar{\nu}_1][c_1][\mu_1], [\bar{\nu}_2][c_2][\mu_2]}^{[\bar{\nu}_4][c_4][\mu_4]} C_{[\mu_1][f_1]J_1, [\mu_2][f_2]J_2}^{[\mu_4][f_4]J_4} C_{[f_1]Y_1I_1, [f_2]Y_2I_2}^{[f_4]Y_4I_4} \\ &C_{[1^2][\nu'_1][\bar{\nu}'_1], [1^2][\nu'_2][\bar{\nu}'_2]}^{[1^4][\nu_4][\bar{\nu}_4]} C_{[\bar{\nu}'_1][c'_1][\mu'_1], [\bar{\nu}'_2][c'_2][\mu'_2]}^{[\bar{\nu}_4][c_4][\mu_4]} C_{[\mu'_1][f'_1]J'_1, [\mu'_2][f'_2]J'_2}^{[\mu_4][f_4]J_4} C_{[f'_1]Y'_1I'_1, [f'_2]Y'_2I'_2}^{[f_4]Y_4I_4} \\ &C_{[\nu_4]W_{x_4}, [\nu_2]W_{x_2}}^{[\nu_4]W_{x_4}} C_{[\nu'_1]W_{x'_1}, [\nu'_2]W_{x'_2}}^{[\nu_4]W_{x_4}} \langle \alpha_1 K_1 | \alpha'_1 K'_1 \rangle \langle \alpha_2 K_2 | H_{34} | \alpha'_2 K'_2 \rangle. \end{aligned} \quad (10)$$

Here C 's are the $SU_{mn} \supset SU_m \times SU_n$ isoscalar factors, $\langle \alpha_1 K_1 | \alpha'_1 K'_1 \rangle$ is the two quark overlap and $\langle \alpha_2 K_2 | H_{34} | \alpha'_2 K'_2 \rangle$ is the two body matrix element and H_{34} represents two-body operator for the second pair. The interacting pair number is $C_2^4 = 6$. For $q\bar{q}$ interaction, $4 \rightarrow 3 + 1$ is used,

$$\begin{aligned} \langle \Phi_{\alpha K} | H_{15} | \Phi_{\alpha K'} \rangle &= \sum_{3,1} C_{[1^3][\nu_3][\bar{\nu}_3], [1][\nu_1][\bar{\nu}_1]}^{[1^4][\nu_4][\bar{\nu}_4]} C_{[\bar{\nu}_3][c_3][\mu_3], [\bar{\nu}_1][c_1][\mu_1]}^{[\bar{\nu}_4][c_4][\mu_4]} C_{[\mu_3][f_3]J_3, [\mu_1][f_1]J_1}^{[\mu_4][f_4]J_4} C_{[f_3]Y_3I_3, [f_1]Y_1I_1}^{[f_4]Y_4I_4} \\ &C_{[1^3][\nu'_3][\bar{\nu}'_3], [1][\nu'_1][\bar{\nu}'_1]}^{[1^4][\nu_4][\bar{\nu}_4]} C_{[\bar{\nu}'_3][c'_3][\mu'_3], [\bar{\nu}'_1][c'_1][\mu'_1]}^{[\bar{\nu}_4][c_4][\mu_4]} C_{[\mu'_3][f'_3]J'_3, [\mu'_1][f'_1]J'_1}^{[\mu_4][f_4]J_4} C_{[f'_3]Y'_3I'_3, [f'_1]Y'_1I'_1}^{[f_4]Y_4I_4} \\ &U(c_3 c_1 c c_{\bar{1}}; c_4 c_2) U(I_3 I_1 I I_{\bar{1}}; I_4 I_2) U(J_3 J_1 J J_{\bar{1}}; J_4 J_2) \\ &U(c'_3 c'_1 c c'_{\bar{1}}; c_4 c'_2) U(I'_3 I'_1 I I'_{\bar{1}}; I_4 I'_2) U(J'_3 J'_1 J J'_{\bar{1}}; J_4 J'_2) \\ &C_{[\nu_4]W_{x_4}, [\nu_3]W_{x_3}, [\nu_1]W_{x_1}}^{[\nu_4]W_{x_4}} C_{[\nu'_3]W_{x'_3}, [\nu'_1]W_{x'_1}}^{[\nu_4]W_{x_4}} \langle \alpha_3 K_3 | \alpha'_3 K'_3 \rangle \langle \alpha_2 K_2 | H_{45} | \alpha'_2 K'_2 \rangle. \end{aligned} \quad (11)$$

Here U 's are Racah coefficients, $\langle \alpha_3 K_3 | \alpha'_3 K'_3 \rangle$ is the three quark overlap and $\langle \alpha_2 K_2 | H_{45} | \alpha'_2 K'_2 \rangle$ is the two body matrix element and H_{45} represents quark-antiquark operator. The interacting pair number is $C_1^4 = 4$. The calculation of every factor in above

equations can be found in Ref.[24]. At last the matrix elements of 5-body Hamiltonian can be obtained,

$$\langle \Phi_{\alpha K} | H_5 | \Phi_{\alpha K'} \rangle = 6 \langle \Phi_{\alpha K} | H_{12} | \Phi_{\alpha K'} \rangle + 4 \langle \Phi_{\alpha K} | H_{15} | \Phi_{\alpha K'} \rangle \quad (12)$$

The matrix elements of five body Hamiltonian on the physical bases can be obtained from the matrix elements on the symmetry bases and the transformation coefficients.

III. QUARK MODELS AND CALCULATION METHOD

A. Naive quark cluster model

The Hamiltonian of naive quark cluster model is [26],

$$H = \sum (m_i + \frac{p_i^2}{2m_i}) - T_{CM} + \sum_{i>j=1}^5 (V_{ij}^C + V_{ij}^G), \quad (13)$$

$$T_{CM} = \frac{1}{2M} \left(\sum_{i=1}^5 \vec{p}_i \right)^2, \quad M = \sum_{i=1}^5 m_i, \quad (14)$$

$$V_{ij}^G = \alpha_s \frac{\vec{\lambda}_i \cdot \vec{\lambda}_j}{4} \left[\frac{1}{r_{ij}} - \frac{\pi \delta(\vec{r})}{2} \left(\frac{1}{m_i^2} + \frac{1}{m_j^2} + \frac{4\vec{\sigma}_i \cdot \vec{\sigma}_j}{3m_i m_j} \right) \right], \quad (15)$$

$$V_{ij}^C = -\alpha_c \vec{\lambda}_i \cdot \vec{\lambda}_j r_{ij}^2. \quad (16)$$

All of the symbols retain their original meaning as in the Ref.([26]).

The single particle orbital wavefunction in the naive quark model is as follows:

$$\phi_L(\vec{r}) = \left(\frac{1}{\pi b^2} \right)^{\frac{3}{4}} e^{-\frac{1}{2b^2}(\vec{r} + \frac{\vec{S}}{2})^2}, \quad (17)$$

$$\phi_R(\vec{r}) = \left(\frac{1}{\pi b^2} \right)^{\frac{3}{4}} e^{-\frac{1}{2b^2}(\vec{r} - \frac{\vec{S}}{2})^2}, \quad (18)$$

$$\phi_U(\vec{r}) = \left(\frac{1}{\pi b^2} \right)^{\frac{3}{4}} e^{-\frac{1}{2b^2}(\vec{r} - \vec{T})^2}, \quad (19)$$

where $\frac{\vec{S}}{2}$ and \vec{T} are the coordinates of the reference center of each quark cluster.

B. Chiral quark model

We choose the Salamanca model as representative of this class of models. Details of the model can be found in Ref.[27]. Here we display only the Hamiltonian,

$$H = \sum (m_i + \frac{p_i^2}{2m_i}) + \sum_{i>j=1}^5 (V_{ij}^C + V_{ij}^G + V_{ij}^\chi + V_{ij}^\sigma), \quad (20)$$

$$\begin{aligned} V_{ij}^\chi &= \frac{1}{3} \alpha_{ch} \frac{\Lambda^2}{\Lambda^2 - m_\chi^2} m_\chi \left[\frac{e^{-m_\chi r_{ij}}}{m_\chi r_{ij}} - \frac{\Lambda^3}{m_\pi^3} \frac{e^{-m_\Lambda r_{ij}}}{m_\Lambda r_{ij}} \right] \vec{\sigma}_i \cdot \vec{\sigma}_j \vec{\lambda}_i \cdot \vec{\lambda}_j, \quad \chi = \pi, K, \eta \\ V_{ij}^\sigma &= -\alpha_{ch} \frac{4m_q^2}{m_\pi^2} \frac{\Lambda^2}{\Lambda^2 - m_\sigma^2} m_\sigma \left[\frac{e^{-m_\sigma r_{ij}}}{m_\sigma r_{ij}} - \frac{\Lambda}{m_\sigma} \frac{e^{-\Lambda r_{ij}}}{m_\Lambda r_{ij}} \right], \end{aligned} \quad (21)$$

V_{ij}^χ and V_{ij}^σ are pseudo scalar and scalar meson exchange potentials. The color confinement and one-gluon-exchange potentials and the single particle orbital wavefunctions are the same as those in the naive quark model.

C. Quark delocalization, color screening model

The quark delocalization, color screening model (QDCSM) is an extension of the naive quark cluster model and was developed with the aim of addressing multi-quark systems [28, 33]. First of all, a quark-delocalization similar to the percolation of electrons in atoms is introduced to take into account the contribution of orbital excitation or the mutual distortion of hadrons in the interaction region. Second, a different parametrization of the confinement interaction is assumed for the quark pairs in different states. The parametrization is an effort to account for the QCD interactions corresponding to various hidden color configurations in the multi-quark system which have not been modeled in two body interaction model. The main advantage of QDCSM is that it allows the multi-quark system to choose its most favorable configuration through its own dynamics. This is accomplished by varying the energy of the system with respect to the delocalization parameter, which is a tentative approach to take into account the self-consistency of the quark and gluon distributions in the course of hadron interaction process.

This model reproduces the existing baryon-baryon interaction data well [28, 33] (bound-state deuteron as well as NN , $N\Lambda$ and $N\Sigma$ scattering). It is therefore interesting to apply the QDCSM to study the pentaquark system. Some generalizations are needed here: the

quark can delocalize among clusters and the color confinement between quarks in different clusters is screened as before, but now the clusters may be colorful as well as colorless. We admit there should be difference of QCD vacuum between colorless hadrons and colorful ones and so color screening should be different but in order to avoid new parameters we employ the original one tentatively.

The quark delocalization is realized by replacing the single particle orbital wavefunctions (ϕ_L and ϕ_R by ψ_l and ψ_r):

$$\begin{aligned}\psi_l &= (\phi_L + \epsilon_1 \phi_R + \epsilon_2 \phi_U)/N_l, \\ \psi_r &= (\phi_R + \epsilon_1 \phi_L + \epsilon_2 \phi_U)/N_r,\end{aligned}\tag{22}$$

$$\psi_u = (\phi_U + \epsilon_3 \phi_L + \epsilon_3 \phi_R)/N_u,\tag{23}$$

$$\begin{aligned}N_l &= \sqrt{1 + \epsilon_1^2 + \epsilon_2^2 + 2\epsilon_1 \langle \phi_L | \phi_R \rangle + 2\epsilon_2 \langle \phi_L | \phi_U \rangle + 2\epsilon_1 \epsilon_2 \langle \phi_R | \phi_U \rangle}, \\ N_r &= \sqrt{1 + \epsilon_1^2 + \epsilon_2^2 + 2\epsilon_1 \langle \phi_L | \phi_R \rangle + 2\epsilon_2 \langle \phi_R | \phi_U \rangle + 2\epsilon_1 \epsilon_2 \langle \phi_L | \phi_U \rangle},\end{aligned}\tag{24}$$

$$N_u = \sqrt{1 + 2\epsilon_3^2 + 2\epsilon_3 \langle \phi_U | \phi_L \rangle + 2\epsilon_3 \langle \phi_U | \phi_R \rangle + 2\epsilon_3^2 \langle \phi_L | \phi_R \rangle},\tag{25}$$

here, ϵ_1 , ϵ_2 and ϵ_3 are variational parameters determined by the dynamics of the multi-quark system rather than adjustable (fitting) parameters.

The color screening is realized by re-parameterizing the color confinement interaction as follows:

$$V_{ij}^C = \begin{cases} -\alpha_c \vec{\lambda}_i \cdot \vec{\lambda}_j r_{ij}^2 & \text{if } i, j \text{ occur in orbits with same reference center} \\ -\alpha_c \vec{\lambda}_i \cdot \vec{\lambda}_j \frac{1 - e^{-\mu r_{ij}^2}}{\mu} & \text{if } i, j \text{ occur in orbits with different reference centers} \end{cases}\tag{26}$$

Details of the model can be found in Ref.[33].

The adiabatic approximation is used here to do a systematic study. For each given separations S and T , the energy of 5-quark state is calculated. (For QDCSM, the energy for given S and T is obtained by varying the energy with the delocalization parameters.) If there exists minimum energy at finite separations S_0 and T_0 , then the energy $E(S_0, T_0)$ is taken as the mass of the state.

IV. RESULTS AND DISCUSSIONS

The calculated transformation coefficients are listed in Table A1 of appendix. (The index of diquark cluster is given in Table A2.) In this table, all the channels are included, so

it can be used to expand the physical bases in terms of the symmetry bases, and vice versa. This table can be used for any quark model Hamiltonian but restricted to JW $qq - qq - \bar{q}$ cluster configuration. For meson-baryon cluster configuration one needs other transformation coefficients which will be given in a company paper.

All possible states within the u, d, s three-flavor world have been calculated. Both single-channel and channel coupling calculations have been carried out with three quark models: the naive quark model, the chiral quark model and the QDCSM. The results are listed in Table 1. Because the parity is a good quantum number, so the results for positive and negative parity states are listed separately. To save space, only the lowest single channel (sc) and channel coupling (cc) results are given. All the states with $Y = 2$ but only several states with $Y \neq 2$ are given. Because most states with $Y \neq 2$ have quite similar features to the ones with $Y = 2$ part. Some general features are listed below.

(1) The parity of the lowest channel is negative in all three quark models, which is different from Jaffe-Wilczek's estimation. The diquark with orbital, color, spin, flavor symmetry: $[2], [11], [11], [11]$ does have the lowest energy under the color-magnetic interaction, however the Pauli principle excludes the S -wave orbital motion between two such diquarks. The P -wave excitation and the "residue" interaction between two diquarks make the energy of JW state higher than the state where two diquarks have the symmetry: $[2] \times [2]$ (orbital), $[11] \times [2]$ (color), $[11] \times [2]$ (spin) and $[11] \times [11]$ (flavor), where S -wave orbital is permitted.

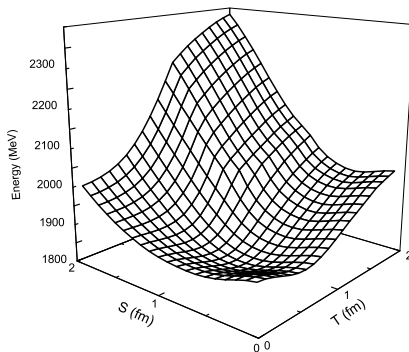


Fig.4 The effective potential for $YIJ = 20\frac{1}{2}$ with channel-coupling in QDCSM.

(2) Generally there exist effective attractions for both positive and negative parity states, thus forming resonance in both parity states is possible. This is due to the hidden color structure of JW configuration as discussed in the introduction part. However in most cases,

the attraction is not enough to make the energy lower than the corresponding threshold, i.e., the sum of corresponding baryon and meson mass. Therefore there will be no narrow resonances except there is special mechanism to prevent the decay. Fig.4 gives the effective potential for the channel-coupling result of Θ^+ in QDCSM. The other two models have similar effective potentials as QDCSM. Other states have similar effective potentials as that of Θ^+ shown in Fig.4. In QDCSM, the mass of Θ^+ is 1786 MeV which is too high to match the experimentally claimed 1540 MeV. Other two models give even higher mass of Θ^+ . For Ξ^{--} , the QDCSM mass is about 1884 MeV, a little higher than the claimed 1862 MeV. Other two models' mass of Ξ^{--} are much higher (1974 MeV for chiral quark model and 2145 for naive quark model).

(3) The spectroscopy of QDCSM and chiral quark model are quite similar except a mass shift. This result is quite consistent with our former work on NN interaction [34], where the two models with quite different mechanism of intermediate range attraction give similar results of deuteron properties and NN scattering phase shifts, and shows the σ meson effect can be replaced by QDCSM mechanism for pentaquark systems as well. However the naive quark model results are quite different. The naive quark model is quite possible not a realistic one for multi-quark system even though it is a good model for single hadrons because it can not reproduce the intermediate range NN attraction and the deuteron properties.

(4) In QDCSM, the majority of the lowest energy states have the triangle pattern: the separations between the two diquarks are $S = 0.8 \sim 1.5$ fm and the separation between the anti-quark and the center of the two diquarks is $T = 0.3 \sim 0.9$ fm except few positive parity states. While, in the chiral quark model and naive quark model, the lowest energy states always have the linear pattern: the separations between the two diquarks are $S = 0.3 \sim 0.8$ fm and the separation between the anti-quark to the diquark center is 0.1fm. We don't have any experimental data to check which one is more realistic, lattice QCD calculation might provide useful information.

Table 1. The mass of the pentaquark in various quark models (S,T in fm and E in MeV).

		QDCSM							Chiral Quark Model			Naive Quark Model		
Y	$I J^P$		E	S	T	ϵ_1	ϵ_2	ϵ_3	E	S	T	E	S	T
2	2 $\frac{5}{2}^+$	sc	2150	1.4	0.6	0.8	0.99	0.8	2387	0.7	0.1	2498	0.7	0.1
2	2 $\frac{3}{2}^+$	sc	2113	1.3	0.6	0.9	0.99	0.99	2338	0.6	0.1	2463	0.7	0.1
		cc	2107	1.3	0.6	0.9	0.99	0.99	2330	0.6	0.1	2453	0.7	0.1
2	2 $\frac{3}{2}^-$	sc	2040	1.0	0.9	0.4	0.7	0.99	2266	0.5	0.1	2342	0.5	0.1
		cc	2038	1.0	0.9	0.2	0.6	0.99	2244	0.6	0.1	2316	0.6	0.1
2	2 $\frac{1}{2}^+$	sc	2255	1.2	0.8	0.1	0.5	0.9	2495	0.8	0.1	2569	0.8	0.1
		cc	2246	1.2	0.7	0.1	0.6	0.8	2484	0.8	0.1	2556	0.7	0.1
2	2 $\frac{1}{2}^-$	sc	2082	1.0	0.9	0.4	0.7	0.99	2329	0.6	0.1	2416	0.6	0.1
		cc	2080	1.0	0.9	0.1	0.5	0.99	2311	0.7	0.1	2393	0.7	0.1
2	1 $\frac{5}{2}^+$	sc	2245	1.1	0.8	0.9	0.99	0.9	2519	0.5	0.1	2608	0.5	0.1
2	1 $\frac{5}{2}^-$	sc	2011	1.0	0.8	0.5	0.8	0.99	2223	0.4	0.1	2321	0.4	0.1
		cc	2009	1.0	0.8	0.2	0.6	0.99	2206	0.6	0.1	2298	0.6	0.1
2	1 $\frac{3}{2}^+$	sc	2037	1.2	0.6	0.3	0.6	0.9	2209	0.6	0.1	2405	0.7	0.1
		cc	1977	1.3	0.3	0.7	0.99	0.6	2148	0.5	0.1	2377	0.6	0.1
2	1 $\frac{3}{2}^-$	sc	1909	0.9	0.8	0.3	0.6	0.99	2061	0.4	0.1	2228	0.4	0.1
		cc	1882	0.8	0.8	0.1	0.5	0.99	2014	0.5	0.1	2157	0.5	0.1
2	1 $\frac{1}{2}^+$	sc	2010	1.2	0.5	0.3	0.6	0.9	2172	0.6	0.1	2377	0.7	0.1
		cc	1931	1.2	0.3	0.8	0.99	0.8	2089	0.4	0.1	2331	0.6	0.1
2	1 $\frac{1}{2}^-$	sc	1886	0.9	0.8	0.6	0.8	0.99	2034	0.3	0.1	2231	0.4	0.1
		cc	1868	0.8	0.8	0.1	0.5	0.99	2000	0.4	0.1	2181	0.5	0.1
2	0 $\frac{5}{2}^+$	sc	2242	1.2	0.7	0.1	0.6	0.8	2483	0.7	0.1	2557	0.7	0.1
2	0 $\frac{3}{2}^+$	sc	2117	1.0	0.7	0.9	0.8	0.99	2326	0.4	0.1	2488	0.7	0.1
		cc	2079	1.1	0.6	0.8	0.99	0.9	2273	0.3	0.1	2451	0.5	0.1
2	0 $\frac{3}{2}^-$	sc	1871	0.8	0.8	0.3	0.6	0.99	2011	0.3	0.1	2219	0.4	0.1
		cc	1870	0.8	0.8	0.3	0.6	0.99	2007	0.4	0.1	2207	0.5	0.1
2	0 $\frac{1}{2}^+$	sc	1915	1.1	0.5	0.1	0.4	0.9	2054	0.7	0.1	2316	0.7	0.1
		cc	1868	1.2	0.1	0.5	0.99	0.5	1999	0.5	0.1	2280	0.6	0.1
2	0 $\frac{1}{2}^-$	sc	1787	0.8	0.7	0.3	0.6	0.99	1887	0.3	0.1	2109	0.3	0.1
		cc	1786	0.8	0.7	0.1	0.5	0.99	1886	0.3	0.1	2100	0.5	0.1

			QDCSM							Chiral Quark Model			Naive Quark Model		
Y	I	J^P		E	S	T	ϵ_1	ϵ_2	ϵ_3	E	S	T	E	S	T
1	$\frac{5}{2}$	$\frac{5}{2}^+$	sc	2103	1.4	0.6	0.9	0.99	0.7	2366	0.7	0.1	2457	0.7	0.1
1	$\frac{3}{2}$	$\frac{5}{2}^+$	sc	2041	1.4	0.5	0.7	0.99	0.6	2273	0.6	0.1	2457	0.7	0.1
			cc	2040	1.4	0.5	0.7	0.99	0.6	2271	0.6	0.1	2457	0.7	0.1
1	$\frac{1}{2}$	$\frac{5}{2}^+$	sc	2150	1.2	0.7	0.8	0.99	0.9	2424	0.5	0.1	2531	0.8	0.1
			cc	2149	1.2	0.7	0.7	0.99	0.8	2421	0.5	0.1	2531	0.8	0.1
1	$\frac{1}{2}$	$\frac{5}{2}^-$	sc	1906	1.0	0.8	0.5	0.8	0.99	2123	0.4	0.1	2289	0.4	0.1
			cc	1903	1.0	0.8	0.2	0.6	0.99	2101	0.6	0.1	2260	0.6	0.1
0	2	$\frac{5}{2}^+$	sc	2161	1.4	0.6	0.8	0.99	0.7	2400	0.7	0.1	2483	0.7	0.1
			cc	2161	1.4	0.6	0.8	0.99	0.7	2400	0.7	0.1	2483	0.7	0.1
0	2	$\frac{5}{2}^-$	sc	2002	1.0	0.8	0.5	0.8	0.99	2211	0.4	0.1	2319	0.4	0.1
			cc	2001	1.0	0.8	0.2	0.6	0.99	2196	0.6	0.1	2296	0.6	0.1
0	1	$\frac{5}{2}^+$	sc	2110	1.4	0.5	0.7	0.99	0.6	2323	0.6	0.1	2483	0.7	0.1
			cc	2109	1.4	0.5	0.7	0.99	0.6	2319	0.6	0.1	2483	0.7	0.1
0	1	$\frac{5}{2}^-$	sc	1944	0.9	0.8	0.5	0.7	0.99	2120	0.4	0.1	2319	0.4	0.1
			cc	1941	0.9	0.8	0.2	0.6	0.99	2106	0.5	0.1	2296	0.6	0.1
0	0	$\frac{5}{2}^+$	sc	2215	1.2	0.7	0.1	0.6	0.8	2444	0.7	0.1	2564	0.7	0.1
			cc	2211	1.2	0.7	0.2	0.7	0.8	2440	0.7	0.1	2563	0.7	0.1
0	0	$\frac{5}{2}^-$	sc	1985	1.0	0.8	0.5	0.8	0.99	2181	0.4	0.1	2321	0.4	0.1
			cc	1983	0.9	0.8	0.2	0.6	0.99	2164	0.5	0.1	2301	0.6	0.1
-1	$\frac{3}{2}$	$\frac{1}{2}^+$	sc	2109	1.1	0.5	0.1	0.5	0.99	2258	0.7	0.1	2404	0.7	0.1
			cc	2036	1.2	0.1	0.7	0.99	0.5	2179	0.5	0.1	2343	0.6	0.1
-1	$\frac{3}{2}$	$\frac{1}{2}^-$	sc	1895	0.7	0.7	0.3	0.6	0.99	1987	0.2	0.1	2158	0.3	0.1
			cc	1884	0.7	0.7	0.0	0.5	0.99	1974	0.3	0.1	2145	0.4	0.1
-1	$\frac{1}{2}$	$\frac{5}{2}^+$	sc	2211	1.2	0.6	0.5	0.8	0.8	2405	0.6	0.1	2539	0.7	0.1
			cc	2175	1.5	0.1	0.6	0.99	0.3	2367	0.6	0.1	2510	0.7	0.1
-2	1	$\frac{5}{2}^+$	sc	2272	1.4	0.4	0.8	0.99	0.5	2462	0.6	0.1	2539	0.7	0.1
			cc	2272	1.4	0.4	0.8	0.99	0.5	2461	0.6	0.1	2539	0.7	0.1
-2	0	$\frac{5}{2}^+$	sc	2244	1.5	0.1	0.6	0.99	0.3	2423	0.6	0.1	2539	0.7	0.1
			cc	2241	1.5	0.1	0.6	0.99	0.3	2416	0.6	0.1	2539	0.7	0.1
-3	$\frac{1}{2}$	$\frac{5}{2}^+$	sc	2323	1.4	0.1	0.7	0.99	0.3	2491	0.5	0.1	2568	0.6	0.1

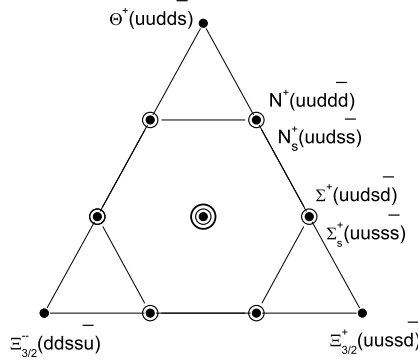


Fig.5(a) Quark content of representative members of the $8_f + \overline{10}_f$ states.

There were discussions on the systematics of the states in anti-decuplet, 27-plet and 35-plet [10, 14, 15, 16, 35]. These states are classified by flavor symmetry. Here, we only consider flavor symmetry of 4-quark system, when coupled to anti-quark, the states in 1_f , 8_f , 10_f , $\overline{10}_f$, 27_f , 35_f will be mixed, i.e., $[4] \otimes [11] \rightarrow [51] \oplus [411]$; $[31] \otimes [11] \rightarrow [42] \oplus [411] \oplus [321]$; $[22] \otimes [11] \rightarrow [33] \oplus [321]$; $[211] \otimes [11] \rightarrow [321] \oplus [222]$. So the states we discuss here are mixed ones. In the following we give the main features of these states in our calculation and compare them with other model results.

(1) $8_f + \overline{10}_f$ states: The quark contents of representative states in the $8_f + \overline{10}_f$ are given in Fig.5(a). The mass spectrum of the states with $J^P = \frac{1}{2}^+$ in three quark models are summarized in Fig. 5(b), and compared with Jaffe-Wilczek's and chiral soliton model results [10]. Obviously, the order of the states of JW, chiral quark model and QDCSM is similar, the chiral soliton model and the naive quark model results are different from the above three. In quark model, generally the states with more s -quarks lie higher, so Σ_s with three strange quarks has the highest energy, while N without strange quark has the lowest energy, N_s , $\Xi_{3/2}$ (with two strange quarks) and $\Lambda, \Sigma, \Theta^+$ (with one strange quark) lie between. While in chiral soliton model the Θ^+ is the lowest state, where flavor $SU(3)$ symmetry is implied. However the flavor $SU(3)$ symmetry is broken by the large strange quark mass. The mass spectrum of the states with $J^P = \frac{1}{2}^-$ in three quark models are summarized in Fig. 5(c), and compared with chiral soliton models [35]. The results of Bijker's [16] are also listed. For $J^P = \frac{1}{2}^-$, the order of the states is different from the one for $J^P = \frac{1}{2}^+$, but all the three

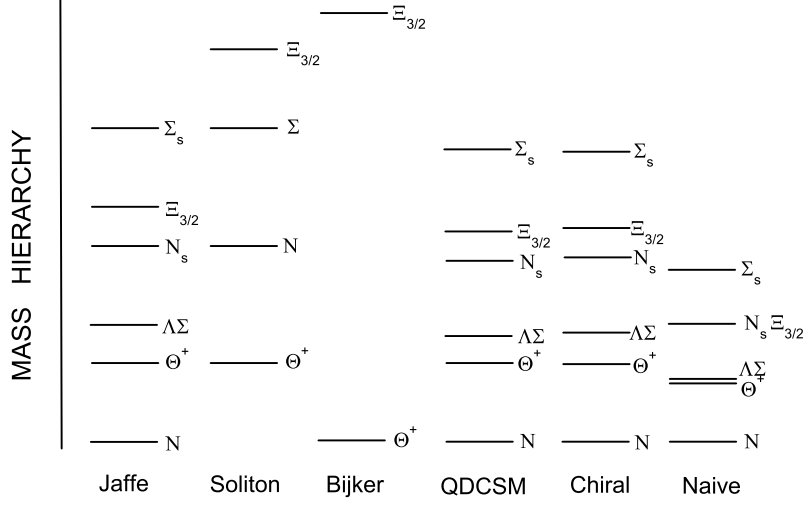


Fig.5(b) Relative masses of states in the $8_f + \overline{10}_f$ with $J^P = \frac{1}{2}^+$ in three quark models, compared with the mass hierarchy in Ref.[10] and Ref.[16].

quark models are similar. The chiral soliton model results are quite different from that of three quark models. Other states with $J^P = \frac{3}{2}^\pm$ and $J^P = \frac{5}{2}^\pm$ are also calculated. To save space, we have not listed all the results here.

(2) 27-plet: The quark contents of representative states in the 27-plet are given in Fig.6(a). The mass spectrum of the states with $J^P = \frac{3}{2}^\pm$ in three quark models are summarized in Fig. 6(b-c), and compared with the chiral soliton model [14] and Bijker's results [16]. We see again that the chiral quark model and QDCSM results are similar but quite different from the results of chiral soliton model and Bijker's results.

(3) 35-plet: The quark contents of representative states in the 35-plet are given in Fig.7(a). The mass spectrum of the states with $J^P = \frac{5}{2}^+$ in three quark models are summarized in Fig. 7(b), and compared with the chiral soliton model [15] and Bijker's results [16]. One sees once more that the chiral quark model and QDCSM results are similar but different from the chiral soliton model and Bijker's results.

V. SUMMARY

The dibaryon states had been claimed and disappeared few times, the pentaquark Θ^+ might disappear and the tetra-quark states might be not confirmed. However multi quark

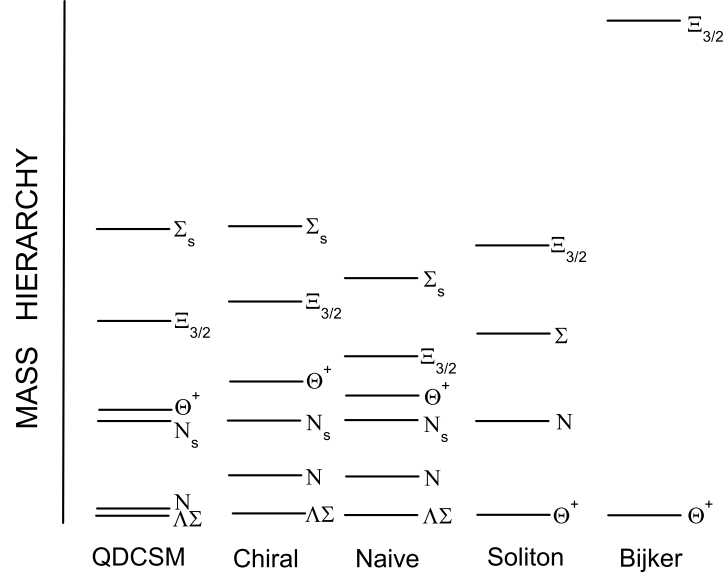


Fig.5(c) Relative masses of states in the $8_f + \overline{10}_f$ with $J^P = \frac{1}{2}^-$ in three quark models, compared with the mass hierarchy in Ref.[35] and Ref.[16].

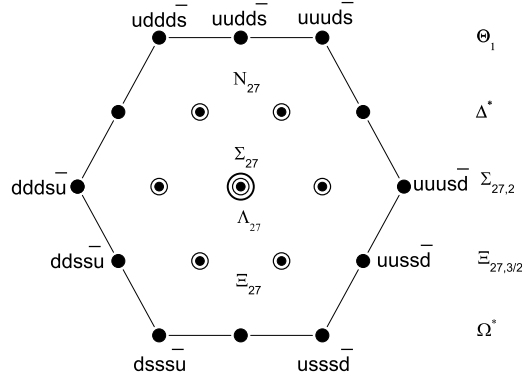


Fig.6(a) Quark content of representative members of the 27-plet states.

state search will be continued. Multi quark components in meson and baryon can not be denied based on QCD. Meson-meson, meson-baryon, baryon-baryon, baryon-antibaryon scattering are measured. If one wants to understand all of these physics from quark-gluon degree of freedom one needs few-body calculation method and the group theoretic method is one of the powerful ones. This paper reports the needed group theory results for five-

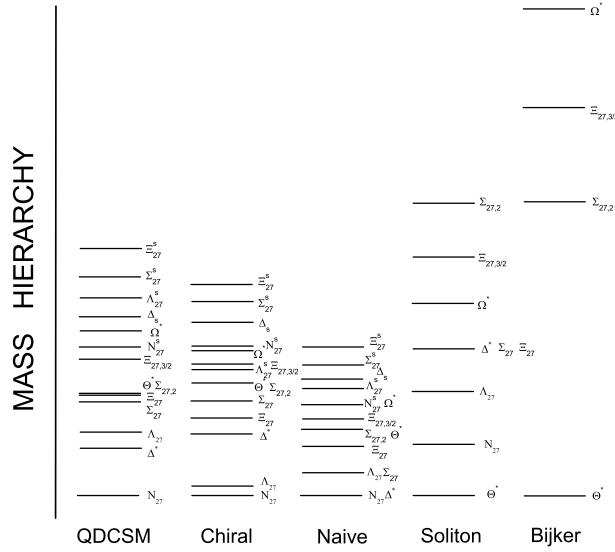


Fig.6(b) Relative masses of states in the 27-plet with $J^P = \frac{3}{2}^-$ in three quark models, compared with the mass in Ref.[14] and Ref.[16].

quark calculation within Jaffe-Wilczek quark cluster configuration. A systematic study of all possible pentaquark states within u, d, s three-flavor world in three quark models is performed. The powerful feature of group theory method is shown by the large amount of spectroscopy data obtained easily in this approach.

About the physical results we emphasize first that in general there exists effective attraction for both parity states because of the JW hidden color configuration. So it is possible to form five-quark resonance, because once such a state is formed it can not decay into colorful sub-systems immediately and must transit to colorless sub-systems through color rearrangement first then decay. This is similar to compound nucleus formation but due to color confinement. It is a new kind microscopic resonance, we call it color confinement resonance. The transition rate is determined by the transition interaction between hidden color states and colorless ones. Up to now we don't have any idea about this transition interaction. So we can not make any definite prediction about the width of these resonances. Lattice QCD might study this transition interaction which is highly expected.

Second, the chiral quark model and QDCSM give similar pentaquark mass spectroscopy and they are different from that of chiral soliton model. The $SU(3)$ flavor symmetry is broken by the large strange quark mass. The similarity of pentaquark mass spectroscopy of chiral

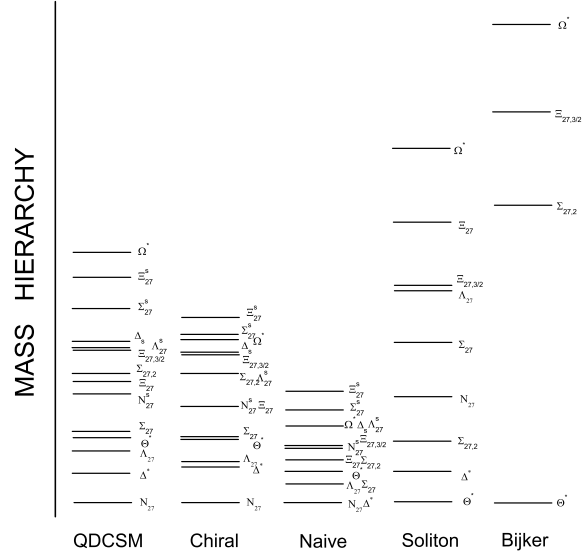


Fig.6(c) Relative masses of states in the 27-plet with $J^P = \frac{3}{2}^+$ in three quark models, compared with the mass in Ref.[14] and Ref.[16].

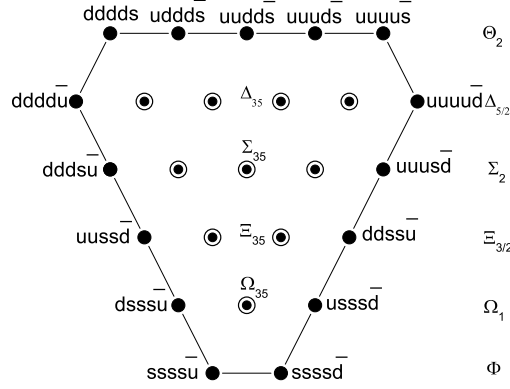


Fig.7(a) Quark content of representative members of the 35-plet states.

quark model and QDCSM means the σ meson effect can be replaced by quark delocalization and color screening mechanism as has been verified in NN intermediate range attraction.

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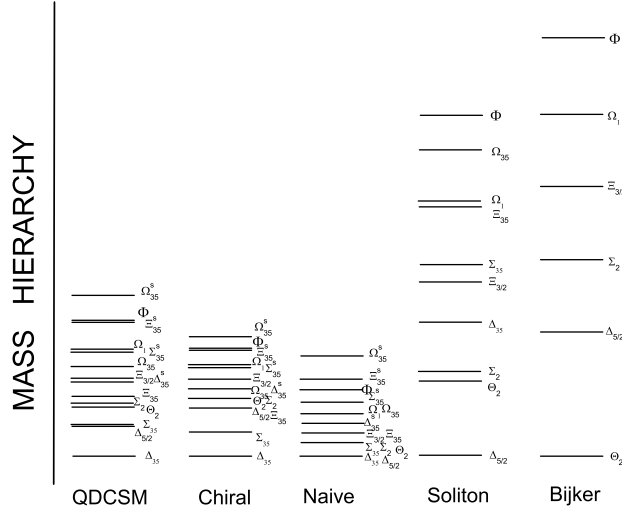


Fig.7(b) Relative masses of states in the 35-plet with $J^P = \frac{5}{2}^+$ in three quark models, compared with the mass in Ref.[15] and Ref.[16].

Appendix

Table A1. Transformation coefficients between physical bases and symmetry bases. The column labels are $[\nu_4]$, $[\mu_4]$, $[f_4]$, $[J_4]$, $[I_4]$. For the first four labels, 1 stands for the symmetry label [4]; 2, [31]; 3, [22]; 4, [211], and for the last one, 1 stands for the quantum number 2; 2, $\frac{3}{2}$; 3, 1; 4, $\frac{1}{2}$; 5, 0. The row labels $D_1 D_2$ stand for two diquark clusters, the index of which are listed in Table A2. $[J_4]$, $[I_4]$ are the same labels as the one in column labels.

$Y = 2 \quad I = 2 \quad J = \frac{5}{2} \quad Y_4 = \frac{4}{3}$	
$D_1 D_2 J_4 I_4$	21111
6 6 1 1	1

$Y = 2 \quad I = 2 \quad J = \frac{3}{2} \quad Y_4 = \frac{4}{3}$	
$D_1 D_2 J_4 I_4$	12121 22121 32121 21111
1 6 2 1	$\frac{2}{3}$ 0 $\frac{1}{3}$ 0
6 1 2 1	0 -1 0 0
6 6 1 1	0 0 0 1
6 6 2 1	$-\frac{1}{3}$ 0 $\frac{2}{3}$ 0

$Y = 2 \quad I = 2 \quad J = \frac{1}{2} \quad Y_4 = \frac{4}{3}$	
$D_1 D_2 J_4 I_4$	12121 22121 32121 23131
1 6 2 1	$\frac{2}{3}$ 0 $\frac{1}{3}$ 0
6 1 2 1	0 -1 0 0
6 6 2 1	$-\frac{1}{3}$ 0 $\frac{2}{3}$ 0
6 6 3 1	0 0 0 -1

$Y = 2 \quad I = 1 \quad J = \frac{5}{2} \quad Y_4 = \frac{4}{3}$	
$D_1 D_2 J_4 I_4$	12213 22213 32213
4 6 1 3	$\frac{2}{3}$ 0 $\frac{1}{3}$
6 4 1 3	0 -1 0
6 6 1 3	$-\frac{1}{3}$ 0 $\frac{2}{3}$

$Y = 2 \quad I = 1 \quad J = \frac{3}{2} \quad Y_4 = \frac{4}{3}$										
$D_1 D_2 J_4 I_4$	12223	22223	24223	32223	34223	12213	22213	32213	21223	23223
1 6 2 3	0	$\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0	0
4 6 1 3	0	0	0	0	0	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0
4 6 2 3	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0
6 1 2 3	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0	0
6 4 1 3	0	0	0	0	0	0	-1	0	0	0
6 4 2 3	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0
6 6 1 3	0	0	0	0	0	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0
6 6 2 3	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$
6 9 2 3	0	0	0	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$
9 6 2 3	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0	0

$Y = 2 \quad I = 1 \quad J = \frac{1}{2} \quad Y_4 = \frac{4}{3}$												
$D_1 D_2 J_4 I_4$	12223	22223	24223	32223	34223	12233	22233	24233	32233	34233	21223	23223
1 6 2 3	0	$\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0	0
1 9 3 3	0	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0
4 6 2 3	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0
4 6 3 3	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0	0
6 1 2 3	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0	0	0	0
6 4 2 3	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0	0
6 4 3 3	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0	0
6 6 2 3	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$
6 6 3 3	0	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0
6 9 2 3	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$
9 1 3 3	0	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0	0
9 6 2 3	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0

$$Y = 2 \quad I = 0 \quad J = \frac{5}{2} \quad Y_4 = \frac{4}{3}$$

$$D_1 D_2 J_4 I_4 \quad 23315$$

$$6 \ 6 \ 1 \ 5 \quad -1$$

$Y = 2 \quad I = 0 \quad J = \frac{3}{2} \quad Y_4 = \frac{4}{3}$						
$D_1 D_2 J_4 I_4$	12325	22325	24325	32325	34325	23315
1 6 2 5	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0
4 9 2 5	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0
6 1 2 5	0	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0
6 6 1 5	0	0	0	0	0	-1
6 6 2 5	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0
9 4 2 5	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0

$Y = 2 \quad I = 0 \quad J = \frac{1}{2} \quad Y_4 = \frac{4}{3}$							
$D_1 D_2 J_4 I_4$	12325	22325	24325	32325	34325	21335	23335
1 6 2 5	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0	0
4 9 2 5	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0
6 1 2 5	0	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0	0
6 6 2 5	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0
6 6 3 5	0	0	0	0	0	$\frac{1}{2}$	$-\frac{1}{2}$
9 4 2 5	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0	0
9 9 3 5	0	0	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$

$$Y = 1 \quad I = \frac{5}{2} \quad J = \frac{5}{2} \quad Y_4 = \frac{4}{3}$$

$$D_1 D_2 J_4 I_4 \quad 21111$$

$$6 \ 6 \ 1 \ 1 \quad 1$$

$Y = 1 \quad I = \frac{5}{2} \quad J = \frac{3}{2} \quad Y_4 = \frac{4}{3}$				
$D_1 D_2 J_4 I_4$	12121	22121	32121	21111
1 6 2 1	$\frac{2}{3}$	0	$\frac{1}{3}$	0
6 1 2 1	0	-1	0	0
6 6 1 1	0	0	0	1
6 6 2 1	$-\frac{1}{3}$	0	$\frac{2}{3}$	0

$Y = 1 \quad I = \frac{5}{2} \quad J = \frac{1}{2} \quad Y_4 = \frac{4}{3}$														
$D_1 D_2 J_4 I_4$	12121	22121	32121	23131										
1 6 2 1	$\frac{2}{3}$	0	$\frac{1}{3}$	0										
6 1 2 1	0	-1	0	0										
6 6 2 1	$-\frac{1}{3}$	0	$\frac{2}{3}$	0										
6 6 3 1	0	0	0	-1										
$Y = 1 \quad I = \frac{3}{2} \quad J = \frac{5}{2} \quad Y_4 = \frac{4}{3}$														
$D_1 D_2 J_4 I_4$	12213	22213	32213	21111										
4 6 1 3	$\frac{2}{3}$	0	$\frac{1}{3}$	0										
6 4 1 3	0	-1	0	0										
6 6 1 1	0	0	0	1										
6 6 1 3	$-\frac{1}{3}$	0	$\frac{2}{3}$	0										
$Y = 1 \quad I = \frac{3}{2} \quad J = \frac{5}{2} \quad Y_4 = \frac{1}{3}$														
$D_1 D_2 J_4 I_4$	12212	22212	32212	21112										
5 6 1 2	$\frac{2}{3}$	0	$\frac{1}{3}$	0										
6 5 1 2	0	-1	0	0										
6 7 1 2	0	0	0	1										
7 6 1 2	$-\frac{1}{3}$	0	$\frac{2}{3}$	0										
$Y = 1 \quad I = \frac{3}{2} \quad J = \frac{3}{2} \quad Y_4 = \frac{4}{3}$														
$D_1 D_2 J_4 I_4$	12121	22121	32121	12223	22223	24223	32223	34223	12213	22213	32213	21111	21223	23223
1 6 2 1	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0	0	0	0	0	0	0	0	0	0
1 6 2 3	0	0	0	0	$\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0
4 6 1 3	0	0	0	0	0	0	0	0	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0	0
4 6 2 3	0	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0
6 1 2 1	0	-1	0	0	0	0	0	0	0	0	0	0	0	0
6 1 2 3	0	0	0	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0	0	0
6 4 1 3	0	0	0	0	0	0	0	0	0	-1	0	0	0	0
6 4 2 3	0	0	0	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0
6 6 1 1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
6 6 1 3	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0	0
6 6 2 1	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0	0
6 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$
6 9 2 3	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$
9 6 2 3	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0
$Y = 1 \quad I = \frac{3}{2} \quad J = \frac{3}{2} \quad Y_4 = \frac{1}{3}$														
$D_1 D_2 J_4 I_4$	12122	12222	22122	22222	24222	32122	32222	34222	12212	22212	32212	21112	21222	23222
1 7 2 2	$\frac{1}{3}$	$-\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	0	0
2 6 2 2	$\frac{1}{3}$	$\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0
5 6 1 2	0	0	0	0	0	0	0	0	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0	0
5 6 2 2	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0
6 2 2 2	0	0	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0
6 5 1 2	0	0	0	0	0	0	0	0	0	-1	0	0	0	0
6 5 2 2	0	$-\frac{1}{3}$	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0
6 7 1 2	0	0	0	0	0	0	0	0	0	0	0	1	0	0
6 7 2 2	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0
6 10 2 2	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$
7 1 2 2	0	0	$-\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0
7 6 1 2	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0	0
7 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$
10 6 2 2	0	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0

$Y = 1 \quad I = \frac{3}{2} \quad J = \frac{1}{2} \quad Y_4 = \frac{4}{3}$														
$D_1 D_2 J_4 I_4$	12121	22121	32121	12223	22223	24223	32223	34223	12233	22233	24233	32233	34233	21223
1 6 2 1	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0	0	0	0	0	0	0	0	0	0
1 6 2 3	0	0	0	0	$\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0
1 9 3 3	0	0	0	0	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0
4 6 2 3	0	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0
4 6 3 3	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0
6 1 2 1	0	-1	0	0	0	0	0	0	0	0	0	0	0	0
6 1 2 3	0	0	0	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0	0	0
6 4 2 3	0	0	0	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0
6 4 3 3	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0
6 6 2 1	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0	0
6 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$
6 6 3 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 6 3 3	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0
6 9 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$
9 1 3 3	0	0	0	0	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0
9 6 2 3	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0
$D_1 D_2 J_4 I_4$	23223	23131												
1 6 2 1	0	0												
1 6 2 3	0	0												
1 9 3 3	0	0												
4 6 2 3	0	0												
4 6 3 3	0	0												
6 1 2 1	0	0												
6 1 2 3	0	0												
6 4 2 3	0	0												
6 4 3 3	0	0												
6 6 2 1	0	0												
6 6 2 3	$-\frac{2}{3}$	0												
6 6 3 1	0	-1												
6 6 3 3	0	0												
6 9 2 3	$\frac{1}{3}$	0												
9 1 3 3	0	0												
9 6 2 3	0	0												
$Y = 1 \quad I = \frac{3}{2} \quad J = \frac{1}{2} \quad Y_4 = \frac{1}{3}$														
$D_1 D_2 J_4 I_4$	12122	12222	22122	22222	24222	32122	32222	34222	12232	22232	24232	32232	34232	21222
1 7 2 2	$\frac{1}{3}$	$-\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	0	0
1 10 3 2	0	0	0	0	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0
2 6 2 2	$\frac{1}{3}$	$\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0
5 6 2 2	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0
5 6 3 2	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0
6 2 2 2	0	0	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0
6 5 2 2	0	$-\frac{1}{3}$	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0
6 5 3 2	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0
6 7 2 2	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0
6 7 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 10 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$
7 1 2 2	0	0	$-\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0
7 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$
7 6 3 2	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0
10 1 3 2	0	0	0	0	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0
10 6 2 2	0	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	23222	23132
1 7 2 2	0	0
1 10 3 2	0	0
2 6 2 2	0	0
5 6 2 2	0	0
5 6 3 2	0	0
6 2 2 2	0	0
6 5 2 2	0	0
6 5 3 2	0	0
6 7 2 2	0	0
6 7 3 2	0	-1
6 10 2 2	$\frac{1}{3}$	0
7 1 2 2	0	0
7 6 2 2	$-\frac{2}{3}$	0
7 6 3 2	0	0
10 1 3 2	0	0
10 6 2 2	0	0

$Y = 1$	$I = \frac{1}{2}$	$J = \frac{5}{2}$	$Y_4 = \frac{4}{3}$
$D_1 D_2 J_4 I_4$	12213	22213	32213 23315
4 6 1 3	$\frac{2}{3}$	0	$\frac{1}{3}$ 0
6 4 1 3	0	-1	0 0
6 6 1 3	$-\frac{1}{3}$	0	$\frac{2}{3}$ 0
6 6 1 5	0	0	0 -1

$Y = 1$	$I = \frac{1}{2}$	$J = \frac{5}{2}$	$Y_4 = \frac{1}{3}$
$D_1 D_2 J_4 I_4$	12214	22214	24414 32214 34414 23314
4 7 1 4	$\frac{1}{2}$	0	0 $\frac{1}{4}$ $-\frac{1}{4}$ 0
5 6 1 4	0	$-\frac{1}{4}$	$\frac{3}{4}$ 0 0 0
6 5 1 4	$\frac{1}{6}$	0	0 $\frac{1}{12}$ $\frac{3}{4}$ 0
6 7 1 4	$-\frac{1}{3}$	0	0 $\frac{2}{3}$ 0 0
7 4 1 4	0	$-\frac{3}{4}$	$-\frac{1}{4}$ 0 0 0
7 6 1 4	0	0	0 0 0 -1

$Y = 1$	$I = \frac{1}{2}$	$J = \frac{3}{2}$	$Y_4 = \frac{4}{3}$
$D_1 D_2 J_4 I_4$	12223	22223	24223 32223 34223 12325 22325 24325 32325 34325 12213 22213 32213 23315
1 6 2 3	0	$\frac{1}{2}$	$-\frac{1}{2}$ 0 0 0 0 0 0 0 0 0 0 0
1 6 2 5	0	0	0 0 0 $-\frac{1}{6}$ 0 0 $-\frac{1}{12}$ $-\frac{3}{4}$ 0 0 0 0
4 6 1 3	0	0	0 0 0 0 0 0 0 0 0 $\frac{2}{3}$ 0 $\frac{1}{3}$ 0
4 6 2 3	0	$\frac{1}{2}$	$\frac{1}{2}$ 0 0 0 0 0 0 0 0 0 0 0 0
4 9 2 5	0	0	0 0 0 $\frac{1}{2}$ 0 0 $\frac{1}{4}$ $-\frac{1}{4}$ 0 0 0 0 0
6 1 2 3	$-\frac{1}{3}$	0	0 $-\frac{1}{6}$ $-\frac{1}{2}$ 0 0 0 0 0 0 0 0 0
6 1 2 5	0	0	0 0 0 0 $\frac{1}{4}$ $-\frac{3}{4}$ 0 0 0 0 0 0 0
6 4 1 3	0	0	0 0 0 0 0 0 0 0 0 0 -1 0 0
6 4 2 3	$-\frac{1}{3}$	0	0 $-\frac{1}{6}$ $\frac{1}{2}$ 0 0 0 0 0 0 0 0 0
6 6 1 3	0	0	0 0 0 0 0 0 0 0 0 0 $-\frac{1}{3}$ 0 $\frac{2}{3}$ 0
6 6 1 5	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 -1
6 6 2 3	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0
6 6 2 5	0	0	0 0 0 0 0 $-\frac{1}{3}$ 0 0 $\frac{2}{3}$ 0 0 0 0 0
6 9 2 3	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0
9 4 2 5	0	0	0 0 0 0 0 $-\frac{3}{4}$ $-\frac{1}{4}$ 0 0 0 0 0 0
9 6 2 3	$-\frac{1}{3}$	0	0 $\frac{2}{3}$ 0 0 0 0 0 0 0 0 0 0

$D_1 D_2 J_4 I_4$	21223	23223
1 6 2 3	0	0
1 6 2 5	0	0
4 6 1 3	0	0
4 6 2 3	0	0
4 9 2 5	0	0
6 1 2 3	0	0
6 1 2 5	0	0
6 4 1 3	0	0
6 4 2 3	0	0
6 6 1 3	0	0
6 6 1 5	0	0
6 6 2 3	$\frac{1}{3}$	$-\frac{2}{3}$
6 6 2 5	0	0
6 9 2 3	$\frac{2}{3}$	$\frac{1}{3}$
9 4 2 5	0	0
9 6 2 3	0	0

$Y = 1 \quad I = \frac{1}{2} \quad J = \frac{3}{2} \quad Y_4 = \frac{1}{3}$														
$D_1 D_2 J_4 I_4$	12224	12324	22224	22324	24224	24324	32224	32324	34224	34324	12214	22214	24414	32214
1 7 2 4	0	0	$\frac{1}{4}$	$\frac{1}{8}$	$-\frac{1}{4}$	$-\frac{3}{8}$	0	0	0	0	0	0	0	0
2 6 2 4	0	0	$\frac{1}{4}$	$-\frac{1}{8}$	$-\frac{1}{4}$	$\frac{3}{8}$	0	0	0	0	0	0	0	0
4 7 1 4	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$
4 7 2 4	0	0	$\frac{3}{8}$	0	$\frac{3}{8}$	0	0	0	0	0	0	0	0	0
4 10 2 4	0	$\frac{1}{4}$	0	0	0	0	0	$\frac{1}{8}$	0	$-\frac{1}{8}$	0	0	0	0
5 6 1 4	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{4}$	$\frac{3}{4}$	0
5 6 2 4	$-\frac{1}{12}$	0	0	0	0	0	$-\frac{1}{24}$	0	$\frac{1}{8}$	0	0	0	0	0
5 9 2 4	0	$\frac{1}{4}$	0	0	0	0	0	$\frac{1}{8}$	0	$-\frac{1}{8}$	0	0	0	0
6 2 2 4	$-\frac{1}{6}$	$\frac{1}{12}$	0	0	0	0	$-\frac{1}{12}$	$\frac{1}{24}$	$-\frac{1}{4}$	$\frac{3}{8}$	0	0	0	0
6 5 1 4	0	0	0	0	0	0	0	0	0	0	$\frac{1}{6}$	0	0	$\frac{1}{12}$
6 5 2 4	0	0	$\frac{1}{8}$	0	$\frac{1}{8}$	0	0	0	0	0	0	0	0	0
6 7 1 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$
6 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 10 2 4	$\frac{1}{12}$	0	0	0	0	0	$-\frac{1}{6}$	0	0	0	0	0	0	0
7 1 2 4	$-\frac{1}{6}$	$-\frac{1}{12}$	0	0	0	0	$-\frac{1}{12}$	$-\frac{1}{24}$	$-\frac{1}{4}$	$-\frac{3}{8}$	0	0	0	0
7 4 1 4	0	0	0	0	0	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0
7 4 2 4	$-\frac{1}{4}$	0	0	0	0	0	$-\frac{1}{8}$	0	$\frac{3}{8}$	0	0	0	0	0
7 6 1 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 2 4	0	$-\frac{1}{3}$	0	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0
7 9 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 5 2 4	0	0	0	$-\frac{3}{8}$	0	$-\frac{1}{8}$	0	0	0	0	0	0	0	0
9 7 2 4	$-\frac{1}{4}$	0	0	0	0	0	$\frac{1}{2}$	0	0	0	0	0	0	0
10 4 2 4	0	0	0	$-\frac{3}{8}$	0	$-\frac{1}{8}$	0	0	0	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	34414	12424	22424	24424	32424	34424	23314	21224	23224	23424
1 7 2 4	0	0	0	0	0	0	0	0	0	0
2 6 2 4	0	0	0	0	0	0	0	0	0	0
4 7 1 4	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0
4 7 2 4	0	0	$\frac{1}{8}$	$\frac{1}{8}$	0	0	0	0	0	0
4 10 2 4	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0
5 6 1 4	0	0	0	0	0	0	0	0	0	0
5 6 2 4	0	$\frac{1}{4}$	0	0	$\frac{1}{8}$	$-\frac{3}{8}$	0	0	0	0
5 9 2 4	0	$\frac{1}{6}$	0	0	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0
6 2 2 4	0	0	0	0	0	0	0	0	0	0
6 5 1 4	$\frac{3}{4}$	0	0	0	0	0	0	0	0	0
6 5 2 4	0	0	$-\frac{3}{8}$	$-\frac{3}{8}$	0	0	0	0	0	0
6 7 1 4	0	0	0	0	0	0	0	0	0	0
6 7 2 4	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0	0
6 10 2 4	0	$\frac{1}{4}$	0	0	$-\frac{1}{2}$	0	0	0	0	0
7 1 2 4	0	0	0	0	0	0	0	0	0	0
7 4 1 4	0	0	0	0	0	0	0	0	0	0
7 4 2 4	0	$-\frac{1}{12}$	0	0	$-\frac{1}{24}$	$\frac{1}{8}$	0	0	0	0
7 6 1 4	0	0	0	0	0	0	-1	0	0	0
7 6 2 4	0	0	0	0	0	0	0	0	0	0
7 9 2 4	0	0	0	0	0	0	$\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0
9 5 2 4	0	0	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0
9 7 2 4	0	$\frac{1}{12}$	0	0	$-\frac{1}{6}$	0	0	0	0	0
10 4 2 4	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	$-\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{3}{4}$	0

$Y = 1 \quad I = \frac{1}{2} \quad J = \frac{1}{2} \quad Y_4 = \frac{4}{3}$

$D_1 D_2 J_4 I_4$	12223	22223	24223	32223	34223	12325	22325	24325	32325	34325	12233	22233	24233	32233
1 6 2 3	0	$\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0	0	0	0
1 6 2 5	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0	0	0	0
1 9 3 3	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$
4 6 2 3	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0	0	0
4 6 3 3	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$
4 9 2 5	0	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0
6 1 2 3	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0	0
6 1 2 5	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0	0	0	0
6 4 2 3	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0
6 4 3 3	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{3}{4}$	0
6 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 6 2 5	0	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0
6 6 3 3	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$
6 6 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 9 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 1 3 3	0	0	0	0	0	0	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0
9 4 2 5	0	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
9 6 2 3	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0
9 9 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	34233	21223	23223	21335	23335
1 6 2 3	0	0	0	0	0
1 6 2 5	0	0	0	0	0
1 9 3 3	$-\frac{1}{4}$	0	0	0	0
4 6 2 3	0	0	0	0	0
4 6 3 3	$-\frac{3}{4}$	0	0	0	0
4 9 2 5	0	0	0	0	0
6 1 2 3	0	0	0	0	0
6 1 2 5	0	0	0	0	0
6 4 2 3	0	0	0	0	0
6 4 3 3	0	0	0	0	0
6 6 2 3	0	$\frac{1}{3}$	$-\frac{2}{3}$	0	0
6 6 2 5	0	0	0	0	0
6 6 3 3	0	0	0	0	0
6 6 3 5	0	0	0	$\frac{1}{2}$	$-\frac{1}{2}$
6 9 2 3	0	$\frac{2}{3}$	$\frac{1}{3}$	0	0
9 1 3 3	0	0	0	0	0
9 4 2 5	0	0	0	0	0
9 6 2 3	0	0	0	0	0
9 9 3 5	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$

$D_1 D_2 J_4 I_4$	12224	12324	22224	22324	24224	24324	32224	32324	34224	34324	12234	12434	22234	22434
1 7 2 4	0	0	$\frac{1}{4}$	$\frac{1}{8}$	$-\frac{1}{4}$	$-\frac{3}{8}$	0	0	0	0	0	0	0	0
1 10 3 4	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{3}{16}$	$-\frac{3}{16}$
2 6 2 4	0	0	$\frac{1}{4}$	$-\frac{1}{8}$	$-\frac{1}{4}$	$\frac{3}{8}$	0	0	0	0	0	0	0	0
2 9 3 4	0	0	0	0	0	0	0	0	0	0	$\frac{3}{8}$	$\frac{1}{24}$	0	0
4 7 2 4	0	0	$\frac{3}{8}$	0	$\frac{3}{8}$	0	0	0	0	0	0	0	0	0
4 7 3 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{8}$	$\frac{1}{8}$	0	0
4 10 2 4	0	$\frac{1}{4}$	0	0	0	0	0	$\frac{1}{8}$	0	$-\frac{1}{8}$	0	0	0	0
5 6 2 4	$-\frac{1}{12}$	0	0	0	0	0	$-\frac{1}{24}$	0	$\frac{1}{8}$	0	0	0	0	0
5 6 3 4	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{16}$	$\frac{9}{16}$
5 9 2 4	0	$\frac{1}{4}$	0	0	0	0	0	$\frac{1}{8}$	0	$-\frac{1}{8}$	0	0	0	0
6 2 2 4	$-\frac{1}{6}$	$\frac{1}{12}$	0	0	0	0	$-\frac{1}{12}$	$\frac{1}{24}$	$-\frac{1}{4}$	$\frac{3}{8}$	0	0	0	0
6 5 2 4	0	0	$\frac{1}{8}$	0	$\frac{1}{8}$	0	0	0	0	0	0	0	0	0
6 5 3 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{24}$	$-\frac{3}{8}$	0	0
6 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 3 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	0
6 10 2 4	$\frac{1}{12}$	0	0	0	0	0	$-\frac{1}{6}$	0	0	0	0	0	0	0
7 1 2 4	$-\frac{1}{6}$	$-\frac{1}{12}$	0	0	0	0	$-\frac{1}{12}$	$-\frac{1}{24}$	$-\frac{1}{4}$	$-\frac{3}{8}$	0	0	0	0
7 4 2 4	$-\frac{1}{4}$	0	0	0	0	0	$-\frac{1}{8}$	0	$\frac{3}{8}$	0	0	0	0	0
7 4 3 4	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{3}{16}$	$-\frac{3}{16}$
7 6 2 4	0	$-\frac{1}{3}$	0	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0
7 6 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 9 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 2 3 4	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{9}{16}$	$-\frac{1}{16}$
9 5 2 4	0	0	0	$-\frac{3}{8}$	0	$-\frac{1}{8}$	0	0	0	0	0	0	0	0
9 7 2 4	$-\frac{1}{4}$	0	0	0	0	0	$\frac{1}{2}$	0	0	0	0	0	0	0
9 10 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 1 3 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{8}$	$\frac{1}{8}$	0	0
10 4 2 4	0	0	0	$-\frac{3}{8}$	0	$-\frac{1}{8}$	0	0	0	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 9 3 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	0

$D_1 D_2 J_4 I_4$	24234	24434	32234	32434	34234	34434	12424	22424	24424	32424	34424	21224	23224	21334
1 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 10 3 4	$\frac{1}{16}$	$\frac{9}{16}$	0	0	0	0	0	0	0	0	0	0	0	0
2 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 9 3 4	0	0	$\frac{3}{16}$	$\frac{1}{48}$	$-\frac{3}{16}$	$\frac{3}{16}$	0	0	0	0	0	0	0	0
4 7 2 4	0	0	0	0	0	0	0	$\frac{1}{8}$	$\frac{1}{8}$	0	0	0	0	0
4 7 3 4	0	0	$-\frac{1}{16}$	$\frac{1}{16}$	$-\frac{9}{16}$	$-\frac{1}{16}$	0	0	0	0	0	0	0	0
4 10 2 4	0	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0
5 6 2 4	0	0	0	0	0	0	$\frac{1}{4}$	0	0	$\frac{1}{8}$	$-\frac{3}{8}$	0	0	0
5 6 3 4	$-\frac{3}{16}$	$\frac{3}{16}$	0	0	0	0	0	0	0	0	0	0	0	0
5 9 2 4	0	0	0	0	0	0	$\frac{1}{6}$	0	0	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0
6 2 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 5 2 4	0	0	0	0	0	0	0	$-\frac{3}{8}$	$-\frac{3}{8}$	0	0	0	0	0
6 5 3 4	0	0	$-\frac{1}{48}$	$-\frac{3}{16}$	$-\frac{3}{16}$	$\frac{3}{16}$	0	0	0	0	0	0	0	0
6 7 2 4	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0
6 7 3 4	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0	0
6 10 2 4	0	0	0	0	0	0	$\frac{1}{4}$	0	0	$-\frac{1}{2}$	0	0	0	0
7 1 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 4 2 4	0	0	0	0	0	0	$-\frac{1}{12}$	0	0	$-\frac{1}{24}$	$\frac{1}{8}$	0	0	0
7 4 3 4	$-\frac{9}{16}$	$-\frac{1}{16}$	0	0	0	0	0	0	0	0	0	0	0	0
7 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$
7 9 2 4	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$	$\frac{1}{4}$	0
9 2 3 4	$-\frac{3}{16}$	$\frac{3}{16}$	0	0	0	0	0	0	0	0	0	0	0	0
9 5 2 4	0	0	0	0	0	0	0	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0
9 7 2 4	0	0	0	0	0	0	$\frac{1}{12}$	0	0	$-\frac{1}{6}$	0	0	0	0
9 10 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$
10 1 3 4	0	0	$-\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{9}{16}$	0	0	0	0	0	0	0	0
10 4 2 4	0	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	$-\frac{1}{12}$	0
10 9 3 4	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	23334	23424
1 7 2 4	0	0
1 10 3 4	0	0
2 6 2 4	0	0
2 9 3 4	0	0
4 7 2 4	0	0
4 7 3 4	0	0
4 10 2 4	0	0
5 6 2 4	0	0
5 6 3 4	0	0
5 9 2 4	0	0
6 2 2 4	0	0
6 5 2 4	0	0
6 5 3 4	0	0
6 7 2 4	0	0
6 7 3 4	0	0
6 10 2 4	0	0
7 1 2 4	0	0
7 4 2 4	0	0
7 4 3 4	0	0
7 6 2 4	0	0
7 6 3 4	$-\frac{1}{2}$	0
7 9 2 4	0	$-\frac{1}{4}$
9 2 3 4	0	0
9 5 2 4	0	0
9 7 2 4	0	0
9 10 3 4	$\frac{1}{2}$	0
10 1 3 4	0	0
10 4 2 4	0	0
10 6 2 4	0	$-\frac{3}{4}$
10 9 3 4	0	0

$Y = 0$	$I = 2$	$J = \frac{5}{2}$	$Y_4 = \frac{1}{3}$	
$D_1 D_2 J_4 I_4$	12212	22212	32212	21112
5 6 1 2	$\frac{2}{3}$	0	$\frac{1}{3}$	0
6 5 1 2	0	-1	0	0
6 7 1 2	0	0	0	1
7 6 1 2	$-\frac{1}{3}$	0	$\frac{2}{3}$	0

$Y = 0$	$I = 2$	$J = \frac{3}{2}$	$Y_4 = \frac{1}{3}$											
$D_1 D_2 J_4 I_4$	12122	12222	22122	22222	24222	32122	32222	34222	12212	22212	32212	21112	21222	23222
1 7 2 2	$\frac{1}{3}$	$-\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	0	0
2 6 2 2	$\frac{1}{3}$	$\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0
5 6 1 2	0	0	0	0	0	0	0	0	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0	0
5 6 2 2	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0
6 2 2 2	0	0	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0
6 5 1 2	0	0	0	0	0	0	0	0	0	-1	0	0	0	0
6 5 2 2	0	$-\frac{1}{3}$	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0
6 7 1 2	0	0	0	0	0	0	0	0	0	0	0	1	0	0
6 7 2 2	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0
6 10 2 2	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$
7 1 2 2	0	0	$-\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0
7 6 1 2	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0	0
7 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$
10 6 2 2	0	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0

$Y = 0 \quad I = 2 \quad J = \frac{1}{2} \quad Y_4 = \frac{1}{3}$															
$D_1 D_2 J_4 I_4$	12122	12222	22122	22222	24222	32122	32222	34222	12232	22232	24232	32232	34232	21222	
1 7 2 2	$\frac{1}{3}$	$-\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	0	0	
1 10 3 2	0	0	0	0	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	
2 6 2 2	$\frac{1}{3}$	$\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0	
5 6 2 2	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0	
5 6 3 2	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0	
6 2 2 2	0	0	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0	
6 5 2 2	0	$-\frac{1}{3}$	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0	
6 5 3 2	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0	
6 7 2 2	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	
6 7 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6 10 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$	
7 1 2 2	0	0	$-\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0	
7 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	
7 6 3 2	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	
10 1 3 2	0	0	0	0	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0	
10 6 2 2	0	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	
$D_1 D_2 J_4 I_4$	23222	23132													
1 7 2 2	0	0													
1 10 3 2	0	0													
2 6 2 2	0	0													
5 6 2 2	0	0													
5 6 3 2	0	0													
6 2 2 2	0	0													
6 5 2 2	0	0													
6 5 3 2	0	0													
6 7 2 2	0	0													
6 7 3 2	0	-1													
6 10 2 2	$\frac{1}{3}$	0													
7 1 2 2	0	0													
7 6 2 2	$-\frac{2}{3}$	0													
7 6 3 2	0	0													
10 1 3 2	0	0													
10 6 2 2	0	0													
$Y = 0 \quad I = 1 \quad J = \frac{5}{2} \quad Y_4 = \frac{1}{3}$															
$D_1 D_2 J_4 I_4$	12214	22214	24414	32214	34414	12212	22212	32212	21112	23314					
4 7 1 4	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0					
5 6 1 2	0	0	0	0	0	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0					
5 6 1 4	0	$-\frac{1}{4}$	$\frac{3}{4}$	0	0	0	0	0	0	0					
6 5 1 2	0	0	0	0	0	0	-1	0	0	0					
6 5 1 4	$\frac{1}{6}$	0	0	$\frac{1}{12}$	$\frac{3}{4}$	0	0	0	0	0					
6 7 1 2	0	0	0	0	0	0	0	0	0	1					
6 7 1 4	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0	0					
7 4 1 4	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0					
7 6 1 2	0	0	0	0	0	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0					
7 6 1 4	0	0	0	0	0	0	0	0	0	-1					
$Y = 0 \quad I = 1 \quad J = \frac{5}{2} \quad Y_4 = -\frac{2}{3}$															
$D_1 D_2 J_4 I_4$	12213	22213	32213	21113	23313										
5 7 1 3	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0										
6 8 1 3	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$										
7 5 1 3	0	-1	0	0	0										
7 7 1 3	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$										
8 6 1 3	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0										

$Y = 0 \quad I = 1 \quad J = \frac{3}{2} \quad Y_4 = \frac{1}{3}$														
$D_1 D_2 J_4 I_4$	12122	12222	22122	22222	24222	32122	32222	34222	12224	12324	22224	22324	24224	24324
1 7 2 2	$\frac{1}{3}$	$-\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	0	0
1 7 2 4	0	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$\frac{1}{8}$	$-\frac{1}{4}$	$-\frac{3}{8}$
2 6 2 2	$\frac{1}{3}$	$\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0
2 6 2 4	0	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{1}{8}$	$-\frac{1}{4}$	$\frac{3}{8}$
4 7 1 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 7 2 4	0	0	0	0	0	0	0	0	0	0	$\frac{3}{8}$	0	$\frac{3}{8}$	0
4 10 2 4	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	0	0	0	0
5 6 1 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 6 1 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 6 2 2	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0
5 6 2 4	0	0	0	0	0	0	0	0	$-\frac{1}{12}$	0	0	0	0	0
5 9 2 4	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	0	0	0	0
6 2 2 2	0	0	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0
6 2 2 4	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{12}$	0	0	0	0
6 5 1 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 5 1 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 5 2 2	0	$-\frac{1}{3}$	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0
6 5 2 4	0	0	0	0	0	0	0	0	0	0	$\frac{1}{8}$	0	$\frac{1}{8}$	0
6 7 1 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 1 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 2 2	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0
6 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 10 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 10 2 4	0	0	0	0	0	0	0	0	$\frac{1}{12}$	0	0	0	0	0
7 1 2 2	0	0	$-\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0
7 1 2 4	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	$-\frac{1}{12}$	0	0	0	0
7 4 1 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 4 2 4	0	0	0	0	0	0	0	0	$-\frac{1}{4}$	0	0	0	0	0
7 6 1 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 1 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 2 4	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	0	0
7 9 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 5 2 4	0	0	0	0	0	0	0	0	0	0	0	$-\frac{3}{8}$	0	$-\frac{1}{8}$
9 7 2 4	0	0	0	0	0	0	0	0	$-\frac{1}{4}$	0	0	0	0	0
10 4 2 4	0	0	0	0	0	0	0	0	0	0	0	$-\frac{3}{8}$	0	$-\frac{1}{8}$
10 6 2 2	0	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	32224	32324	34224	34324	12214	22214	24414	32214	34414	12424	22424	24424	32424	34424
1 7 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 7 1 4	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0
4 7 2 4	0	0	0	0	0	0	0	0	0	0	$\frac{1}{8}$	$\frac{1}{8}$	0	0
4 10 2 4	0	$\frac{1}{8}$	0	$-\frac{1}{8}$	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{1}{4}$
5 6 1 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 6 1 4	0	0	0	0	0	$-\frac{1}{4}$	$\frac{3}{4}$	0	0	0	0	0	0	0
5 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 6 2 4	$-\frac{1}{24}$	0	$\frac{1}{8}$	0	0	0	0	0	0	$\frac{1}{4}$	0	0	$\frac{1}{8}$	$-\frac{3}{8}$
5 9 2 4	0	$\frac{1}{8}$	0	$-\frac{1}{8}$	0	0	0	0	0	$\frac{1}{6}$	0	0	$\frac{1}{12}$	$\frac{1}{4}$
6 2 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 2 2 4	$-\frac{1}{12}$	$\frac{1}{24}$	$-\frac{1}{4}$	$\frac{3}{8}$	0	0	0	0	0	0	0	0	0	0
6 5 1 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 5 1 4	0	0	0	0	$\frac{1}{6}$	0	0	$\frac{1}{12}$	$\frac{3}{4}$	0	0	0	0	0
6 5 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 5 2 4	0	0	0	0	0	0	0	0	0	0	$-\frac{3}{8}$	$-\frac{3}{8}$	0	0
6 7 1 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 1 4	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0	0
6 7 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 10 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 10 2 4	$-\frac{1}{6}$	0	0	0	0	0	0	0	0	$\frac{1}{4}$	0	0	$-\frac{1}{2}$	0
7 1 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 1 2 4	$-\frac{1}{12}$	$-\frac{1}{24}$	$-\frac{1}{4}$	$-\frac{3}{8}$	0	0	0	0	0	0	0	0	0	0
7 4 1 4	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0
7 4 2 4	$-\frac{1}{8}$	0	$\frac{3}{8}$	0	0	0	0	0	0	$-\frac{1}{12}$	0	0	$-\frac{1}{24}$	$\frac{1}{8}$
7 6 1 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 1 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 2 4	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0	0	0
7 9 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 5 2 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{4}$	$\frac{1}{4}$	0	0
9 7 2 4	$\frac{1}{2}$	0	0	0	0	0	0	0	0	$\frac{1}{12}$	0	0	$-\frac{1}{6}$	0
10 4 2 4	0	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0
10 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	12212	22212	32212	21112	23314	21222	23222	21224	23224	23424				
1 7 2 2	0	0	0	0	0	0	0	0	0	0				
1 7 2 4	0	0	0	0	0	0	0	0	0	0				
2 6 2 2	0	0	0	0	0	0	0	0	0	0				
2 6 2 4	0	0	0	0	0	0	0	0	0	0				
4 7 1 4	0	0	0	0	0	0	0	0	0	0				
4 7 2 4	0	0	0	0	0	0	0	0	0	0				
4 10 2 4	0	0	0	0	0	0	0	0	0	0				
5 6 1 2	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0	0	0	0	0	0				
5 6 1 4	0	0	0	0	0	0	0	0	0	0				
5 6 2 2	0	0	0	0	0	0	0	0	0	0				
5 6 2 4	0	0	0	0	0	0	0	0	0	0				
5 9 2 4	0	0	0	0	0	0	0	0	0	0				
6 2 2 2	0	0	0	0	0	0	0	0	0	0				
6 2 2 4	0	0	0	0	0	0	0	0	0	0				
6 5 1 2	0	-1	0	0	0	0	0	0	0	0				
6 5 1 4	0	0	0	0	0	0	0	0	0	0				
6 5 2 2	0	0	0	0	0	0	0	0	0	0				
6 5 2 4	0	0	0	0	0	0	0	0	0	0				
6 7 1 2	0	0	0	1	0	0	0	0	0	0				
6 7 1 4	0	0	0	0	0	0	0	0	0	0				
6 7 2 2	0	0	0	0	0	0	0	0	0	0				
6 7 2 4	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0					
6 10 2 2	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$	0	0	0				
6 10 2 4	0	0	0	0	0	0	0	0	0	0				
7 1 2 2	0	0	0	0	0	0	0	0	0	0				
7 1 2 4	0	0	0	0	0	0	0	0	0	0				
7 4 1 4	0	0	0	0	0	0	0	0	0	0				
7 4 2 4	0	0	0	0	0	0	0	0	0	0				
7 6 1 2	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0	0	0	0	0	0				
7 6 1 4	0	0	0	0	-1	0	0	0	0	0				
7 6 2 2	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0	0	0				
7 6 2 4	0	0	0	0	0	0	0	0	0	0				
7 9 2 4	0	0	0	0	0	0	$\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$					
9 5 2 4	0	0	0	0	0	0	0	0	0	0				
9 7 2 4	0	0	0	0	0	0	0	0	0	0				
10 4 2 4	0	0	0	0	0	0	0	0	0	0				
10 6 2 2	0	0	0	0	0	0	0	0	0	0				
10 6 2 4	0	0	0	0	0	0	$-\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{3}{4}$					
$Y=0 \quad I=1 \quad J=\frac{3}{2} \quad Y_4=-\frac{2}{3}$														
$D_1 D_2 J_4 I_4$	12123	12223	12323	22123	22223	22323	24223	24323	32123	32223	32323	34223	34323	12213
1 8 2 3	$\frac{1}{9}$	$-\frac{1}{6}$	$-\frac{1}{18}$	0	0	0	0	0	$\frac{1}{18}$	$-\frac{1}{12}$	$-\frac{1}{36}$	$-\frac{1}{4}$	$-\frac{1}{4}$	0
2 7 2 3	$\frac{4}{9}$	0	$\frac{1}{18}$	0	0	0	0	0	$\frac{2}{9}$	0	$\frac{1}{36}$	0	$\frac{1}{4}$	0
3 6 2 3	$\frac{1}{9}$	$\frac{1}{6}$	$-\frac{1}{18}$	0	0	0	0	0	$\frac{1}{18}$	$\frac{1}{12}$	$-\frac{1}{36}$	$\frac{1}{4}$	$-\frac{1}{4}$	0
5 7 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$
5 7 2 3	0	0	0	0	$\frac{1}{2}$	0	$\frac{1}{2}$	0	0	0	0	0	0	0
5 10 2 3	0	0	$\frac{1}{2}$	0	0	0	0	0	0	0	$\frac{1}{4}$	0	$-\frac{1}{4}$	0
6 3 2 3	0	0	0	$-\frac{1}{6}$	$-\frac{1}{4}$	$\frac{1}{12}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
6 8 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 8 2 3	$-\frac{1}{9}$	0	$-\frac{2}{9}$	0	0	0	0	0	$\frac{2}{9}$	0	$\frac{4}{9}$	0	0	0
7 2 2 3	0	0	0	$-\frac{2}{3}$	0	$-\frac{1}{12}$	0	$\frac{1}{4}$	0	0	0	0	0	0
7 5 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 5 2 3	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	$\frac{1}{2}$	0	0
7 7 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 2 3	$-\frac{2}{9}$	0	$\frac{1}{9}$	0	0	0	0	0	$\frac{4}{9}$	0	$-\frac{2}{9}$	0	0	0
7 10 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 1 2 3	0	0	0	$-\frac{1}{6}$	$\frac{1}{4}$	$\frac{1}{12}$	$-\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
8 6 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$
8 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 5 2 3	0	0	0	0	0	$-\frac{3}{4}$	0	$-\frac{1}{4}$	0	0	0	0	0	0
10 7 2 3	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	$\frac{2}{3}$	0	0	0	0

$D_1 D_2 J_4 I_4$	22213	32213	21113	23313	21223	23223
1 8 2 3	0	0	0	0	0	0
2 7 2 3	0	0	0	0	0	0
3 6 2 3	0	0	0	0	0	0
5 7 1 3	0	$\frac{1}{3}$	0	0	0	0
5 7 2 3	0	0	0	0	0	0
5 10 2 3	0	0	0	0	0	0
6 3 2 3	0	0	0	0	0	0
6 8 1 3	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0	0
6 8 2 3	0	0	0	0	0	0
7 2 2 3	0	0	0	0	0	0
7 5 1 3	-1	0	0	0	0	0
7 5 2 3	0	0	0	0	0	0
7 7 1 3	0	0	$\frac{2}{3}$	$\frac{1}{3}$	0	0
7 7 2 3	0	0	0	0	0	0
7 10 2 3	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$
8 1 2 3	0	0	0	0	0	0
8 6 1 3	0	$\frac{2}{3}$	0	0	0	0
8 6 2 3	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$
10 5 2 3	0	0	0	0	0	0
10 7 2 3	0	0	0	0	0	0

$Y = 0 \quad I = 1 \quad J = \frac{1}{2} \quad Y_4 = \frac{1}{3}$														
$D_1 D_2 J_4 I_4$	12122	12222	22122	22222	24222	32122	32222	34222	12224	12324	22224	22324	24224	24324
1 7 2 2	$\frac{1}{3}$	$-\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	0	0
1 7 2 4	0	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$\frac{1}{8}$	$-\frac{1}{4}$	$-\frac{3}{8}$
1 10 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 10 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 6 2 2	$\frac{1}{3}$	$\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0
2 6 2 4	0	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{1}{8}$	$-\frac{1}{4}$	$\frac{3}{8}$
2 9 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 7 2 4	0	0	0	0	0	0	0	0	0	0	$\frac{3}{8}$	0	$\frac{3}{8}$	0
4 7 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 10 2 4	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	0	0	0	0
5 6 2 2	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0
5 6 2 4	0	0	0	0	0	0	0	0	$-\frac{1}{12}$	0	0	0	0	0
5 6 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 6 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 9 2 4	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	0	0	0	0
6 2 2 2	0	0	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0
6 2 2 4	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{12}$	0	0	0	0
6 5 2 2	0	$-\frac{1}{3}$	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0
6 5 2 4	0	0	0	0	0	0	0	0	0	0	$\frac{1}{8}$	0	$\frac{1}{8}$	0
6 5 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 5 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 2 2	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0
6 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 10 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 10 2 4	0	0	0	0	0	0	0	0	$\frac{1}{12}$	0	0	0	0	0
7 1 2 2	0	0	$-\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0
7 1 2 4	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	$-\frac{1}{12}$	0	0	0	0
7 4 2 4	0	0	0	0	0	0	0	0	$-\frac{1}{4}$	0	0	0	0	0
7 4 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 2 4	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	0	0
7 6 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 9 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 2 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 5 2 4	0	0	0	0	0	0	0	0	0	0	0	$-\frac{3}{8}$	0	$-\frac{1}{8}$
9 7 2 4	0	0	0	0	0	0	0	0	$-\frac{1}{4}$	0	0	0	0	0
9 10 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 1 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 1 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 4 2 4	0	0	0	0	0	0	0	0	0	0	0	$-\frac{3}{8}$	0	$-\frac{1}{8}$
10 6 2 2	0	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 9 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	32224	32324	34224	34324	12232	22232	24232	32232	34232	12234	12434	22234	22434	24234
1 7 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 10 3 2	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0
1 10 3 4	0	0	0	0	0	0	0	0	0	0	0	$\frac{3}{16}$	$-\frac{3}{16}$	$\frac{1}{16}$
2 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 9 3 4	0	0	0	0	0	0	0	0	0	$\frac{3}{8}$	$\frac{1}{24}$	0	0	0
4 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 7 3 4	0	0	0	0	0	0	0	0	0	$-\frac{1}{8}$	$\frac{1}{8}$	0	0	0
4 10 2 4	0	$\frac{1}{8}$	0	$-\frac{1}{8}$	0	0	0	0	0	0	0	0	0	0
5 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 6 2 4	$-\frac{1}{24}$	0	$\frac{1}{8}$	0	0	0	0	0	0	0	0	0	0	0
5 6 3 2	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0	0	0	0	0
5 6 3 4	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{16}$	$\frac{9}{16}$	$-\frac{3}{16}$
5 9 2 4	0	$\frac{1}{8}$	0	$-\frac{1}{8}$	0	0	0	0	0	0	0	0	0	0
6 2 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 2 2 4	$-\frac{1}{12}$	$\frac{1}{24}$	$-\frac{1}{4}$	$\frac{3}{8}$	0	0	0	0	0	0	0	0	0	0
6 5 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 5 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 5 3 2	0	0	0	0	0	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0	0	0	0	0
6 5 3 4	0	0	0	0	0	0	0	0	0	$-\frac{1}{24}$	$-\frac{3}{8}$	0	0	0
6 7 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 3 4	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	0	0
6 10 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 10 2 4	$-\frac{1}{6}$	0	0	0	0	0	0	0	0	0	0	0	0	0
7 1 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 1 2 4	$-\frac{1}{12}$	$-\frac{1}{24}$	$-\frac{1}{4}$	$-\frac{3}{8}$	0	0	0	0	0	0	0	0	0	0
7 4 2 4	$-\frac{1}{8}$	0	$\frac{3}{8}$	0	0	0	0	0	0	0	0	0	0	0
7 4 3 4	0	0	0	0	0	0	0	0	0	0	0	$\frac{3}{16}$	$-\frac{3}{16}$	$-\frac{9}{16}$
7 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 2 4	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0	0	0
7 6 3 2	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0	0
7 6 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 9 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 2 3 4	0	0	0	0	0	0	0	0	0	0	0	$-\frac{9}{16}$	$-\frac{1}{16}$	$-\frac{3}{16}$
9 5 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 7 2 4	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0	0	0	0	0
9 10 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 1 3 2	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0
10 1 3 4	0	0	0	0	0	0	0	0	0	$-\frac{1}{8}$	$\frac{1}{8}$	0	0	0
10 4 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 9 3 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	0

$D_1 D_2 J_4 I_4$	24434	32234	32434	34234	34434	12424	22424	24424	32424	34424	21222	23222	21224	23224
1 7 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 10 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 10 3 4	$\frac{9}{16}$	0	0	0	0	0	0	0	0	0	0	0	0	0
2 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 9 3 4	0	$\frac{3}{16}$	$\frac{1}{48}$	$-\frac{3}{16}$	$\frac{3}{16}$	0	0	0	0	0	0	0	0	0
4 7 2 4	0	0	0	0	0	0	$\frac{1}{8}$	$\frac{1}{8}$	0	0	0	0	0	0
4 7 3 4	0	$-\frac{1}{16}$	$\frac{1}{16}$	$-\frac{9}{16}$	$-\frac{1}{16}$	0	0	0	0	0	0	0	0	0
4 10 2 4	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0
5 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 6 2 4	0	0	0	0	0	$\frac{1}{4}$	0	0	$\frac{1}{8}$	$-\frac{3}{8}$	0	0	0	0
5 6 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 6 3 4	$\frac{3}{16}$	0	0	0	0	0	0	0	0	0	0	0	0	0
5 9 2 4	0	0	0	0	0	$\frac{1}{8}$	0	0	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0
6 2 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 2 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 5 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 5 2 4	0	0	0	0	0	0	$-\frac{3}{8}$	$-\frac{3}{8}$	0	0	0	0	0	0
6 5 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 5 3 4	0	$-\frac{1}{48}$	$-\frac{3}{16}$	$-\frac{3}{16}$	$\frac{3}{16}$	0	0	0	0	0	0	0	0	0
6 7 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$
6 7 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 3 4	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0	0	0
6 10 2 2	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$	0	0
6 10 2 4	0	0	0	0	0	$\frac{1}{4}$	0	0	$-\frac{1}{2}$	0	0	0	0	0
7 1 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 1 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 4 2 4	0	0	0	0	0	$-\frac{1}{12}$	0	0	$-\frac{1}{24}$	$\frac{1}{8}$	0	0	0	0
7 4 3 4	$-\frac{1}{16}$	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 2 2	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0	0
7 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 9 2 4	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$	$\frac{1}{4}$
9 2 3 4	$\frac{3}{16}$	0	0	0	0	0	0	0	0	0	0	0	0	0
9 5 2 4	0	0	0	0	0	0	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0
9 7 2 4	0	0	0	0	0	$\frac{1}{12}$	0	0	$-\frac{1}{6}$	0	0	0	0	0
9 10 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 1 3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 1 3 4	0	$-\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{9}{16}$	0	0	0	0	0	0	0	0	0
10 4 2 4	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
10 6 2 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	$-\frac{1}{12}$
10 9 3 4	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	23132	21334	23334	23424
1 7 2 2	0	0	0	0
1 7 2 4	0	0	0	0
1 10 3 2	0	0	0	0
1 10 3 4	0	0	0	0
2 6 2 2	0	0	0	0
2 6 2 4	0	0	0	0
2 9 3 4	0	0	0	0
4 7 2 4	0	0	0	0
4 7 3 4	0	0	0	0
4 10 2 4	0	0	0	0
5 6 2 2	0	0	0	0
5 6 2 4	0	0	0	0
5 6 3 2	0	0	0	0
5 6 3 4	0	0	0	0
5 9 2 4	0	0	0	0
6 2 2 2	0	0	0	0
6 2 2 4	0	0	0	0
6 5 2 2	0	0	0	0
6 5 2 4	0	0	0	0
6 5 3 2	0	0	0	0
6 5 3 4	0	0	0	0
6 7 2 2	0	0	0	0
6 7 2 4	0	0	0	0
6 7 3 2	-1	0	0	0
6 7 3 4	0	0	0	0
6 10 2 2	0	0	0	0
6 10 2 4	0	0	0	0
7 1 2 2	0	0	0	0
7 1 2 4	0	0	0	0
7 4 2 4	0	0	0	0
7 4 3 4	0	0	0	0
7 6 2 2	0	0	0	0
7 6 2 4	0	0	0	0
7 6 3 2	0	0	0	0
7 6 3 4	0	$\frac{1}{2}$	$-\frac{1}{2}$	0
7 9 2 4	0	0	0	$-\frac{1}{4}$
9 2 3 4	0	0	0	0
9 5 2 4	0	0	0	0
9 7 2 4	0	0	0	0
9 10 3 4	0	$\frac{1}{2}$	$\frac{1}{2}$	0
10 1 3 2	0	0	0	0
10 1 3 4	0	0	0	0
10 4 2 4	0	0	0	0
10 6 2 2	0	0	0	0
10 6 2 4	0	0	0	$-\frac{3}{4}$
10 9 3 4	0	0	0	0

$Y = 0 \quad I = 1 \quad J = \frac{1}{2} \quad Y_4 = -\frac{2}{3}$															
$D_1 D_2 J_4 I_4$	12123	12223	12323	22123	22223	22323	24223	24323	32123	32223	32323	34223	34323	12233	12233
1 8 2 3	$\frac{1}{9}$	$-\frac{1}{6}$	$-\frac{1}{18}$	0	0	0	0	0	$\frac{1}{18}$	$-\frac{1}{12}$	$-\frac{1}{36}$	$-\frac{1}{4}$	$-\frac{1}{4}$	0	
2 7 2 3	$\frac{4}{9}$	0	$\frac{1}{18}$	0	0	0	0	0	$\frac{2}{9}$	0	$\frac{1}{36}$	0	$\frac{1}{4}$	0	
2 10 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$	
3 6 2 3	$\frac{1}{9}$	$\frac{1}{6}$	$-\frac{1}{18}$	0	0	0	0	0	$\frac{1}{18}$	$\frac{1}{12}$	$-\frac{1}{36}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	
5 7 2 3	0	0	0	0	$\frac{1}{2}$	0	$\frac{1}{2}$	0	0	0	0	0	0	0	
5 7 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	
5 10 2 3	0	0	$\frac{1}{2}$	0	0	0	0	0	0	0	$\frac{1}{4}$	0	$-\frac{1}{4}$	0	
6 3 2 3	0	0	0	$-\frac{1}{6}$	$-\frac{1}{4}$	$\frac{1}{12}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	
6 8 2 3	$-\frac{1}{9}$	0	$-\frac{2}{9}$	0	0	0	0	0	$\frac{2}{9}$	0	$\frac{4}{9}$	0	0	0	
6 8 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 2 2 3	0	0	0	$-\frac{2}{3}$	0	$-\frac{1}{12}$	0	$\frac{1}{4}$	0	0	0	0	0	0	
7 5 2 3	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	$\frac{1}{2}$	0	0	
7 5 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 7 2 3	$-\frac{2}{9}$	0	$\frac{1}{9}$	0	0	0	0	0	$\frac{4}{9}$	0	$-\frac{2}{9}$	0	0	0	
7 7 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 10 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8 1 2 3	0	0	0	$-\frac{1}{6}$	$\frac{1}{4}$	$\frac{1}{12}$	$-\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	
8 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8 6 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	
10 2 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10 5 2 3	0	0	0	0	0	$-\frac{3}{4}$	0	$-\frac{1}{4}$	0	0	0	0	0	0	
10 7 2 3	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	$\frac{2}{3}$	0	0	0	0	
10 10 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
$D_1 D_2 J_4 I_4$	22233	24233	32233	34233	21223	23223	21333	23133	23333						
1 8 2 3	0	0	0	0	0	0	0	0	0						
2 7 2 3	0	0	0	0	0	0	0	0	0						
2 10 3 3	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0						
3 6 2 3	0	0	0	0	0	0	0	0	0						
5 7 2 3	0	0	0	0	0	0	0	0	0						
5 7 3 3	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0	0	0	0	0						
5 10 2 3	0	0	0	0	0	0	0	0	0						
6 3 2 3	0	0	0	0	0	0	0	0	0						
6 8 2 3	0	0	0	0	0	0	0	0	0						
6 8 3 3	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{1}{3}$	$-\frac{1}{3}$						
7 2 2 3	0	0	0	0	0	0	0	0	0						
7 5 2 3	0	0	0	0	0	0	0	0	0						
7 5 3 3	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0	0	0	0	0						
7 7 2 3	0	0	0	0	0	0	0	0	0						
7 7 3 3	0	0	0	0	0	0	$-\frac{1}{6}$	$-\frac{2}{3}$	$\frac{1}{6}$						
7 10 2 3	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$	0	0	0						
8 1 2 3	0	0	0	0	0	0	0	0	0						
8 6 2 3	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0	0	0						
8 6 3 3	0	0	$\frac{2}{3}$	0	0	0	0	0	0						
10 2 3 3	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0						
10 5 2 3	0	0	0	0	0	0	0	0	0						
10 7 2 3	0	0	0	0	0	0	0	0	0						
10 10 3 3	0	0	0	0	0	0	$\frac{1}{2}$	0	$\frac{1}{2}$						
$Y = 0 \quad I = 0 \quad J = \frac{5}{2} \quad Y_4 = \frac{1}{3}$															
$D_1 D_2 J_4 I_4$	12214	22214	24414	32214	34414	23314									
4 7 1 4	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0									
5 6 1 4	0	$-\frac{1}{4}$	$\frac{3}{4}$	0	0	0									
6 5 1 4	$\frac{1}{6}$	0	0	$\frac{1}{12}$	$\frac{3}{4}$	0									
6 7 1 4	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0									
7 4 1 4	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0									
7 6 1 4	0	0	0	0	0	-1									

$Y = 0 \quad I = 0 \quad J = \frac{5}{2} \quad Y_4 = -\frac{2}{3}$					
$D_1 D_2 J_4 I_4$	12215	22215	24415	32215	34415
4 8 1 5	$\frac{1}{3}$	0	0	$\frac{1}{6}$	$-\frac{1}{2}$
5 7 1 5	0	$-\frac{1}{2}$	$\frac{1}{2}$	0	0
7 5 1 5	$\frac{1}{3}$	0	0	$\frac{1}{6}$	$\frac{1}{2}$
7 7 1 5	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0
8 4 1 5	0	$-\frac{1}{2}$	$-\frac{1}{2}$	0	0

$Y = 0 \quad I = 0 \quad J = \frac{3}{2} \quad Y_4 = \frac{1}{3}$														
$D_1 D_2 J_4 I_4$	12224	12324	22224	22324	24224	24324	32224	32324	34224	34324	12214	22214	24414	32214
1 7 2 4	0	0	$\frac{1}{4}$	$\frac{1}{8}$	$-\frac{1}{4}$	$-\frac{3}{8}$	0	0	0	0	0	0	0	0
2 6 2 4	0	0	$\frac{1}{4}$	$-\frac{1}{8}$	$-\frac{1}{4}$	$\frac{3}{8}$	0	0	0	0	0	0	0	0
4 7 1 4	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$
4 7 2 4	0	0	$\frac{3}{8}$	0	$\frac{3}{8}$	0	0	0	0	0	0	0	0	0
4 10 2 4	0	$\frac{1}{4}$	0	0	0	0	0	$\frac{1}{8}$	0	$-\frac{1}{8}$	0	0	0	0
5 6 1 4	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{4}$	$\frac{3}{4}$	0
5 6 2 4	$-\frac{1}{12}$	0	0	0	0	0	$-\frac{1}{24}$	0	$\frac{1}{8}$	0	0	0	0	0
5 9 2 4	0	$\frac{1}{4}$	0	0	0	0	0	$\frac{1}{8}$	0	$-\frac{1}{8}$	0	0	0	0
6 2 2 4	$-\frac{1}{6}$	$\frac{1}{12}$	0	0	0	0	$-\frac{1}{12}$	$\frac{1}{24}$	$-\frac{1}{4}$	$\frac{3}{8}$	0	0	0	0
6 5 1 4	0	0	0	0	0	0	0	0	0	0	$\frac{1}{6}$	0	0	$\frac{1}{12}$
6 5 2 4	0	0	$\frac{1}{8}$	0	$\frac{1}{8}$	0	0	0	0	0	0	0	0	0
6 7 1 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$
6 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 10 2 4	$\frac{1}{12}$	0	0	0	0	0	$-\frac{1}{6}$	0	0	0	0	0	0	0
7 1 2 4	$-\frac{1}{6}$	$-\frac{1}{12}$	0	0	0	0	$-\frac{1}{12}$	$-\frac{1}{24}$	$-\frac{1}{4}$	$-\frac{3}{8}$	0	0	0	0
7 4 1 4	0	0	0	0	0	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0
7 4 2 4	$-\frac{1}{4}$	0	0	0	0	0	$-\frac{1}{8}$	0	$\frac{3}{8}$	0	0	0	0	0
7 6 1 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 2 4	0	$-\frac{1}{3}$	0	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0
7 9 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 5 2 4	0	0	0	$-\frac{3}{8}$	0	$-\frac{1}{8}$	0	0	0	0	0	0	0	0
9 7 2 4	$-\frac{1}{4}$	0	0	0	0	0	$\frac{1}{2}$	0	0	0	0	0	0	0
10 4 2 4	0	0	0	$-\frac{3}{8}$	0	$-\frac{1}{8}$	0	0	0	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	34414	12424	22424	24424	32424	34424	23314	21224	23224	23424
1 7 2 4	0	0	0	0	0	0	0	0	0	0
2 6 2 4	0	0	0	0	0	0	0	0	0	0
4 7 1 4	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0
4 7 2 4	0	0	$\frac{1}{8}$	$\frac{1}{8}$	0	0	0	0	0	0
4 10 2 4	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0
5 6 1 4	0	0	0	0	0	0	0	0	0	0
5 6 2 4	0	$\frac{1}{4}$	0	0	$\frac{1}{8}$	$-\frac{3}{8}$	0	0	0	0
5 9 2 4	0	$\frac{1}{6}$	0	0	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0
6 2 2 4	0	0	0	0	0	0	0	0	0	0
6 5 1 4	$\frac{3}{4}$	0	0	0	0	0	0	0	0	0
6 5 2 4	0	0	$-\frac{3}{8}$	$-\frac{3}{8}$	0	0	0	0	0	0
6 7 1 4	0	0	0	0	0	0	0	0	0	0
6 7 2 4	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0
6 10 2 4	0	$\frac{1}{4}$	0	0	$-\frac{1}{2}$	0	0	0	0	0
7 1 2 4	0	0	0	0	0	0	0	0	0	0
7 4 1 4	0	0	0	0	0	0	0	0	0	0
7 4 2 4	0	$-\frac{1}{12}$	0	0	$-\frac{1}{24}$	$\frac{1}{8}$	0	0	0	0
7 6 1 4	0	0	0	0	0	0	-1	0	0	0
7 6 2 4	0	0	0	0	0	0	0	0	0	0
7 9 2 4	0	0	0	0	0	0	0	$\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$
9 5 2 4	0	0	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0
9 7 2 4	0	$\frac{1}{12}$	0	0	$-\frac{1}{6}$	0	0	0	0	0
10 4 2 4	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	$-\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{3}{4}$	0

$Y = 0 \quad I = 0 \quad J = \frac{3}{2} \quad Y_4 = -\frac{2}{3}$														
$D_1 D_2 J_4 I_4$	12225	22225	24225	32225	34225	12215	22215	24415	32215	34415	12425	22425	24425	32425
2 7 2 5	0	$\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0	0	0	0
4 8 1 5	0	0	0	0	0	$\frac{1}{3}$	0	0	$\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0
4 8 2 5	0	$\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$\frac{1}{4}$	0
5 7 1 5	0	0	0	0	0	0	$-\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0
5 7 2 5	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	$\frac{1}{6}$	0	0	$\frac{1}{12}$
5 10 2 5	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$	$-\frac{1}{2}$	0
7 2 2 5	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0	0
7 5 1 5	0	0	0	0	0	$\frac{1}{3}$	0	0	$\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0
7 5 2 5	0	$\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	$-\frac{1}{4}$	$-\frac{1}{4}$	0
7 7 1 5	0	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0
7 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 10 2 5	$\frac{1}{6}$	0	0	$-\frac{1}{3}$	0	0	0	0	0	0	$\frac{1}{6}$	0	0	$-\frac{1}{3}$
8 4 1 5	0	0	0	0	0	0	$-\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0
8 4 2 5	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$
8 9 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 8 2 5	$-\frac{1}{6}$	0	0	$\frac{1}{3}$	0	0	0	0	0	0	$\frac{1}{6}$	0	0	$-\frac{1}{3}$
10 5 2 5	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$
10 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
$D_1 D_2 J_4 I_4$	34425	21225	23225	23425										
2 7 2 5	0	0	0	0										
4 8 1 5	0	0	0	0										
4 8 2 5	0	0	0	0										
5 7 1 5	0	0	0	0										
5 7 2 5	$-\frac{1}{4}$	0	0	0										
5 10 2 5	0	0	0	0										
7 2 2 5	0	0	0	0										
7 5 1 5	0	0	0	0										
7 5 2 5	0	0	0	0										
7 7 1 5	0	0	0	0										
7 7 2 5	0	$\frac{1}{3}$	$-\frac{2}{3}$	0										
7 10 2 5	0	0	0	0										
8 4 1 5	0	0	0	0										
8 4 2 5	$\frac{1}{4}$	0	0	0										
8 9 2 5	0	$\frac{1}{3}$	$\frac{1}{6}$	$-\frac{1}{2}$										
9 8 2 5	0	0	0	0										
10 5 2 5	$-\frac{1}{2}$	0	0	0										
10 7 2 5	0	$-\frac{1}{3}$	$-\frac{1}{6}$	$-\frac{1}{2}$										

$Y = 0 \quad I = 0 \quad J = \frac{1}{2} \quad Y_4 = \frac{1}{3}$														
$D_1 D_2 J_4 I_4$	12224	12324	22224	22324	24224	24324	32224	32324	34224	34324	12234	12434	22234	22434
1 7 2 4	0	0	$\frac{1}{4}$	$\frac{1}{8}$	$-\frac{1}{4}$	$-\frac{3}{8}$	0	0	0	0	0	0	0	0
1 10 3 4	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{3}{16}$	$-\frac{3}{16}$
2 6 2 4	0	0	$\frac{1}{4}$	$-\frac{1}{8}$	$-\frac{1}{4}$	$\frac{3}{8}$	0	0	0	0	0	0	0	0
2 9 3 4	0	0	0	0	0	0	0	0	0	0	$\frac{3}{8}$	$\frac{1}{24}$	0	0
4 7 2 4	0	0	$\frac{3}{8}$	0	$\frac{3}{8}$	0	0	0	0	0	0	0	0	0
4 7 3 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{8}$	$\frac{1}{8}$	0	0
4 10 2 4	0	$\frac{1}{4}$	0	0	0	0	0	$\frac{1}{8}$	0	$-\frac{1}{8}$	0	0	0	0
5 6 2 4	$-\frac{1}{12}$	0	0	0	0	0	$-\frac{1}{24}$	0	$\frac{1}{8}$	0	0	0	0	0
5 6 3 4	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{16}$	$\frac{9}{16}$
5 9 2 4	0	$\frac{1}{4}$	0	0	0	0	0	$\frac{1}{8}$	0	$-\frac{1}{8}$	0	0	0	0
6 2 2 4	$-\frac{1}{6}$	$\frac{1}{12}$	0	0	0	0	$-\frac{1}{12}$	$\frac{1}{24}$	$-\frac{1}{4}$	$\frac{3}{8}$	0	0	0	0
6 5 2 4	0	0	$\frac{1}{8}$	0	$\frac{1}{8}$	0	0	0	0	0	0	0	0	0
6 5 3 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{24}$	$-\frac{3}{8}$	0	0
6 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 7 3 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	0
6 10 2 4	$\frac{1}{12}$	0	0	0	0	0	$-\frac{1}{6}$	0	0	0	0	0	0	0
7 1 2 4	$-\frac{1}{6}$	$-\frac{1}{12}$	0	0	0	0	$-\frac{1}{12}$	$-\frac{1}{24}$	$-\frac{1}{4}$	$-\frac{3}{8}$	0	0	0	0
7 4 2 4	$-\frac{1}{4}$	0	0	0	0	0	$-\frac{1}{8}$	0	$\frac{3}{8}$	0	0	0	0	0
7 4 3 4	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{3}{16}$	$-\frac{3}{16}$
7 6 2 4	0	$-\frac{1}{3}$	0	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0
7 6 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 9 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 2 3 4	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{9}{16}$	$-\frac{1}{16}$
9 5 2 4	0	0	0	$-\frac{3}{8}$	0	$-\frac{1}{8}$	0	0	0	0	0	0	0	0
9 7 2 4	$-\frac{1}{4}$	0	0	0	0	0	$\frac{1}{2}$	0	0	0	0	0	0	0
9 10 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 1 3 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{8}$	$\frac{1}{8}$	0	0
10 4 2 4	0	0	0	$-\frac{3}{8}$	0	$-\frac{1}{8}$	0	0	0	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 9 3 4	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	0

$D_1 D_2 J_4 I_4$	24234	24434	32234	32434	34234	34434	12424	22424	24424	32424	34424	21224	23224	21334
1 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 10 3 4	$\frac{1}{16}$	$\frac{9}{16}$	0	0	0	0	0	0	0	0	0	0	0	0
2 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 9 3 4	0	0	$\frac{3}{16}$	$\frac{1}{48}$	$-\frac{3}{16}$	$\frac{3}{16}$	0	0	0	0	0	0	0	0
4 7 2 4	0	0	0	0	0	0	0	$\frac{1}{8}$	$\frac{1}{8}$	0	0	0	0	0
4 7 3 4	0	0	$-\frac{1}{16}$	$\frac{1}{16}$	$-\frac{9}{16}$	$-\frac{1}{16}$	0	0	0	0	0	0	0	0
4 10 2 4	0	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0
5 6 2 4	0	0	0	0	0	0	$\frac{1}{4}$	0	0	$\frac{1}{8}$	$-\frac{3}{8}$	0	0	0
5 6 3 4	$-\frac{3}{16}$	$\frac{3}{16}$	0	0	0	0	0	0	0	0	0	0	0	0
5 9 2 4	0	0	0	0	0	0	$\frac{1}{6}$	0	0	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0
6 2 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 5 2 4	0	0	0	0	0	0	0	$-\frac{3}{8}$	$-\frac{3}{8}$	0	0	0	0	0
6 5 3 4	0	0	$-\frac{1}{48}$	$-\frac{3}{16}$	$-\frac{3}{16}$	$\frac{3}{16}$	0	0	0	0	0	0	0	0
6 7 2 4	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0
6 7 3 4	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0	0
6 10 2 4	0	0	0	0	0	0	$\frac{1}{4}$	0	0	$-\frac{1}{2}$	0	0	0	0
7 1 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 4 2 4	0	0	0	0	0	0	$-\frac{1}{12}$	0	0	$-\frac{1}{24}$	$\frac{1}{8}$	0	0	0
7 4 3 4	$-\frac{9}{16}$	$-\frac{1}{16}$	0	0	0	0	0	0	0	0	0	0	0	0
7 6 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$
7 9 2 4	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$	$\frac{1}{4}$	0
9 2 3 4	$-\frac{3}{16}$	$\frac{3}{16}$	0	0	0	0	0	0	0	0	0	0	0	0
9 5 2 4	0	0	0	0	0	0	0	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0
9 7 2 4	0	0	0	0	0	0	$\frac{1}{12}$	0	0	$-\frac{1}{6}$	0	0	0	0
9 10 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$
10 1 3 4	0	0	$-\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{9}{16}$	0	0	0	0	0	0	0	0
10 4 2 4	0	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0
10 6 2 4	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	$-\frac{1}{12}$	0
10 9 3 4	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	23334	23424
1 7 2 4	0	0
1 10 3 4	0	0
2 6 2 4	0	0
2 9 3 4	0	0
4 7 2 4	0	0
4 7 3 4	0	0
4 10 2 4	0	0
5 6 2 4	0	0
5 6 3 4	0	0
5 9 2 4	0	0
6 2 2 4	0	0
6 5 2 4	0	0
6 5 3 4	0	0
6 7 2 4	0	0
6 7 3 4	0	0
6 10 2 4	0	0
7 1 2 4	0	0
7 4 2 4	0	0
7 4 3 4	0	0
7 6 2 4	0	0
7 6 3 4	$-\frac{1}{2}$	0
7 9 2 4	0	$-\frac{1}{4}$
9 2 3 4	0	0
9 5 2 4	0	0
9 7 2 4	0	0
9 10 3 4	$\frac{1}{2}$	0
10 1 3 4	0	0
10 4 2 4	0	0
10 6 2 4	0	$-\frac{3}{4}$
10 9 3 4	0	0

$Y = 0 \quad I = 0 \quad J = \frac{1}{2} \quad Y_4 = -\frac{2}{3}$														
$D_1 D_2 J_4 I_4$	12225	22225	24225	32225	34225	12235	12435	22235	22435	24235	24435	32235	32435	34235
2 7 2 5	0	$\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0	0	0	0
2 10 3 5	0	0	0	0	0	0	0	$\frac{3}{8}$	$-\frac{1}{8}$	$\frac{1}{8}$	$\frac{3}{8}$	0	0	0
3 9 3 5	0	0	0	0	0	$\frac{1}{4}$	$\frac{1}{12}$	0	0	0	0	$\frac{1}{8}$	$\frac{1}{24}$	$-\frac{1}{8}$
4 8 2 5	0	$\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0	0	0
4 8 3 5	0	0	0	0	0	$-\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	$-\frac{1}{24}$	$\frac{1}{8}$	$-\frac{3}{8}$
5 7 2 5	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0
5 7 3 5	0	0	0	0	0	0	0	$\frac{1}{8}$	$\frac{3}{8}$	$-\frac{3}{8}$	$\frac{1}{8}$	0	0	0
5 10 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 2 2 5	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0	0
7 5 2 5	0	$\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0	0	0
7 5 3 5	0	0	0	0	0	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	$-\frac{1}{24}$	$-\frac{1}{8}$	$-\frac{3}{8}$
7 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 3 5	0	0	0	0	0	$-\frac{1}{3}$	0	0	0	0	0	$\frac{2}{3}$	0	0
7 10 2 5	$\frac{1}{6}$	0	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	0	0	0
8 4 2 5	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0
8 4 3 5	0	0	0	0	0	0	0	$\frac{1}{8}$	$-\frac{3}{8}$	$-\frac{3}{8}$	$-\frac{1}{8}$	0	0	0
8 9 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 3 3 5	0	0	0	0	0	0	0	$-\frac{3}{8}$	$-\frac{1}{8}$	$-\frac{1}{8}$	$\frac{3}{8}$	0	0	0
9 8 2 5	$-\frac{1}{6}$	0	0	$\frac{1}{3}$	0	0	0	0	0	0	0	0	0	0
10 2 3 5	0	0	0	0	0	$-\frac{1}{4}$	$\frac{1}{12}$	0	0	0	0	$-\frac{1}{8}$	$\frac{1}{24}$	$\frac{1}{8}$
10 5 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 10 3 5	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	0	0	0	$\frac{2}{3}$	0

$D_1 D_2 J_4 I_4$	34435	12425	22425	24425	32425	34425	21225	23225	23425
2 7 2 5	0	0	0	0	0	0	0	0	0
2 10 3 5	0	0	0	0	0	0	0	0	0
3 9 3 5	$\frac{3}{8}$	0	0	0	0	0	0	0	0
4 8 2 5	0	0	$\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0
4 8 3 5	$-\frac{1}{8}$	0	0	0	0	0	0	0	0
5 7 2 5	0	$\frac{1}{6}$	0	0	$\frac{1}{12}$	$-\frac{1}{4}$	0	0	0
5 7 3 5	0	0	0	0	0	0	0	0	0
5 10 2 5	0	0	$\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0
7 2 2 5	0	0	0	0	0	0	0	0	0
7 5 2 5	0	0	$-\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0
7 5 3 5	$\frac{1}{8}$	0	0	0	0	0	0	0	0
7 7 2 5	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0
7 7 3 5	0	0	0	0	0	0	0	0	0
7 10 2 5	0	$\frac{1}{6}$	0	0	$-\frac{1}{3}$	0	0	0	0
8 4 2 5	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$\frac{1}{4}$	0	0	0
8 4 3 5	0	0	0	0	0	0	0	0	0
8 9 2 5	0	0	0	0	0	0	$\frac{1}{3}$	$\frac{1}{6}$	$-\frac{1}{2}$
9 3 3 5	0	0	0	0	0	0	0	0	0
9 8 2 5	0	$\frac{1}{6}$	0	0	$-\frac{1}{3}$	0	0	0	0
10 2 3 5	$\frac{3}{8}$	0	0	0	0	0	0	0	0
10 5 2 5	0	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$-\frac{1}{2}$	0	0	0
10 7 2 5	0	0	0	0	0	0	$-\frac{1}{3}$	$-\frac{1}{6}$	$-\frac{1}{2}$
10 10 3 5	0	0	0	0	0	0	0	0	0

$Y = -1 \quad I = \frac{3}{2} \quad J = \frac{5}{2} \quad Y_4 = -\frac{2}{3}$					
$D_1 D_2 J_4 I_4$	12213	22213	32213	21113	23313
5 7 1 3	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0
6 8 1 3	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$
7 5 1 3	0	-1	0	0	0
7 7 1 3	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$
8 6 1 3	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0

$Y = -1 \quad I = \frac{3}{2} \quad J = \frac{3}{2} \quad Y_4 = -\frac{2}{3}$														
$D_1 D_2 J_4 I_4$	12123	12223	12323	22123	22223	22323	24223	24323	32123	32223	32323	34223	34323	12213
1 8 2 3	$\frac{1}{9}$	$-\frac{1}{6}$	$-\frac{1}{18}$	0	0	0	0	0	$\frac{1}{18}$	$-\frac{1}{12}$	$-\frac{1}{36}$	$-\frac{1}{4}$	$-\frac{1}{4}$	0
2 7 2 3	$\frac{1}{9}$	0	$\frac{1}{18}$	0	0	0	0	0	$\frac{2}{9}$	0	$\frac{1}{36}$	0	$\frac{1}{4}$	0
3 6 2 3	$\frac{1}{9}$	$\frac{1}{6}$	$-\frac{1}{18}$	0	0	0	0	0	$\frac{1}{18}$	$\frac{1}{12}$	$-\frac{1}{36}$	$\frac{1}{4}$	$-\frac{1}{4}$	0
5 7 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$
5 7 2 3	0	0	0	0	$\frac{1}{2}$	0	$\frac{1}{2}$	0	0	0	0	0	0	0
5 10 2 3	0	0	$\frac{1}{2}$	0	0	0	0	0	0	0	$\frac{1}{4}$	0	$-\frac{1}{4}$	0
6 3 2 3	0	0	0	$-\frac{1}{6}$	$-\frac{1}{4}$	$\frac{1}{12}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
6 8 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 8 2 3	$-\frac{1}{9}$	0	$-\frac{2}{9}$	0	0	0	0	0	$\frac{2}{9}$	0	$\frac{4}{9}$	0	0	0
7 2 2 3	0	0	0	$-\frac{2}{3}$	0	$-\frac{1}{12}$	0	$\frac{1}{4}$	0	0	0	0	0	0
7 5 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 5 2 3	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	$\frac{1}{2}$	0	0
7 7 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 2 3	$-\frac{2}{9}$	0	$\frac{1}{9}$	0	0	0	0	0	$\frac{4}{9}$	0	$-\frac{2}{9}$	0	0	0
7 10 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 1 2 3	0	0	0	$-\frac{1}{6}$	$\frac{1}{4}$	$\frac{1}{12}$	$-\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
8 6 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$
8 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 5 2 3	0	0	0	0	0	$-\frac{3}{4}$	0	$-\frac{1}{4}$	0	0	0	0	0	0
10 7 2 3	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	$\frac{2}{3}$	0	0	0	0

$D_1 D_2 J_4 I_4$	22213	32213	21113	23313	21223	23223
1 8 2 3	0	0	0	0	0	0
2 7 2 3	0	0	0	0	0	0
3 6 2 3	0	0	0	0	0	0
5 7 1 3	0	$\frac{1}{3}$	0	0	0	0
5 7 2 3	0	0	0	0	0	0
5 10 2 3	0	0	0	0	0	0
6 3 2 3	0	0	0	0	0	0
6 8 1 3	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0	0
6 8 2 3	0	0	0	0	0	0
7 2 2 3	0	0	0	0	0	0
7 5 1 3	-1	0	0	0	0	0
7 5 2 3	0	0	0	0	0	0
7 7 1 3	0	0	$\frac{2}{3}$	$\frac{1}{3}$	0	0
7 7 2 3	0	0	0	0	0	0
7 10 2 3	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$
8 1 2 3	0	0	0	0	0	0
8 6 1 3	0	$\frac{2}{3}$	0	0	0	0
8 6 2 3	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$
10 5 2 3	0	0	0	0	0	0
10 7 2 3	0	0	0	0	0	0

$Y = -1 \quad I = \frac{3}{2} \quad J = \frac{1}{2} \quad Y_4 = -\frac{2}{3}$														
$D_1 D_2 J_4 I_4$	12123	12223	12323	22123	22223	22323	24223	24323	32123	32223	32323	34223	34323	12233
1 8 2 3	$\frac{1}{9}$	$-\frac{1}{6}$	$-\frac{1}{18}$	0	0	0	0	0	$\frac{1}{18}$	$-\frac{1}{12}$	$-\frac{1}{36}$	$-\frac{1}{4}$	$-\frac{1}{4}$	0
2 7 2 3	$\frac{4}{9}$	0	$\frac{1}{18}$	0	0	0	0	0	$\frac{2}{9}$	0	$\frac{1}{36}$	0	$\frac{1}{4}$	0
2 10 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$
3 6 2 3	$\frac{1}{9}$	$\frac{1}{6}$	$-\frac{1}{18}$	0	0	0	0	0	$\frac{1}{18}$	$\frac{1}{12}$	$-\frac{1}{36}$	$\frac{1}{4}$	$-\frac{1}{4}$	0
5 7 2 3	0	0	0	0	$\frac{1}{2}$	0	$\frac{1}{2}$	0	0	0	0	0	0	0
5 7 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$
5 10 2 3	0	0	$\frac{1}{2}$	0	0	0	0	0	0	0	$\frac{1}{4}$	0	$-\frac{1}{4}$	0
6 3 2 3	0	0	0	$-\frac{1}{6}$	$-\frac{1}{4}$	$\frac{1}{12}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
6 8 2 3	$-\frac{1}{9}$	0	$-\frac{2}{9}$	0	0	0	0	0	$\frac{2}{9}$	0	$\frac{4}{9}$	0	0	0
6 8 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 2 2 3	0	0	0	$-\frac{2}{3}$	0	$-\frac{1}{12}$	0	$\frac{1}{4}$	0	0	0	0	0	0
7 5 2 3	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	$\frac{1}{2}$	0	0
7 5 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 2 3	$-\frac{2}{9}$	0	$\frac{1}{9}$	0	0	0	0	0	$\frac{4}{9}$	0	$-\frac{2}{9}$	0	0	0
7 7 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 10 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 1 2 3	0	0	0	$-\frac{1}{6}$	$\frac{1}{4}$	$\frac{1}{12}$	$-\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
8 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 6 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$
10 2 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 5 2 3	0	0	0	0	0	$-\frac{3}{4}$	0	$-\frac{1}{4}$	0	0	0	0	0	0
10 7 2 3	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	$\frac{2}{3}$	0	0	0	0
10 10 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	22233	24233	32233	34233	21223	23223	21333	23133	23333	
1 8 2 3	0	0	0	0	0	0	0	0	0	
2 7 2 3	0	0	0	0	0	0	0	0	0	
2 10 3 3	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	
3 6 2 3	0	0	0	0	0	0	0	0	0	
5 7 2 3	0	0	0	0	0	0	0	0	0	
5 7 3 3	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0	0	0	0	0	
5 10 2 3	0	0	0	0	0	0	0	0	0	
6 3 2 3	0	0	0	0	0	0	0	0	0	
6 8 2 3	0	0	0	0	0	0	0	0	0	
6 8 3 3	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{1}{3}$	$-\frac{1}{3}$	
7 2 2 3	0	0	0	0	0	0	0	0	0	
7 5 2 3	0	0	0	0	0	0	0	0	0	
7 5 3 3	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0	0	0	0	0	
7 7 2 3	0	0	0	0	0	0	0	0	0	
7 7 3 3	0	0	0	0	0	0	$-\frac{1}{6}$	$-\frac{2}{3}$	$\frac{1}{6}$	
7 10 2 3	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$	0	0	0	
8 1 2 3	0	0	0	0	0	0	0	0	0	
8 6 2 3	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0	0	0	
8 6 3 3	0	0	$\frac{2}{3}$	0	0	0	0	0	0	
10 2 3 3	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	
10 5 2 3	0	0	0	0	0	0	0	0	0	
10 7 2 3	0	0	0	0	0	0	0	0	0	
10 10 3 3	0	0	0	0	0	0	$\frac{1}{2}$	0	$\frac{1}{2}$	
$Y = -1 \quad I = \frac{1}{2} \quad J = \frac{5}{2} \quad Y_4 = -\frac{2}{3}$										
$D_1 D_2 J_4 I_4$	12215	22215	24415	32215	34415	12213	22213	32213	21113	23313
4 8 1 5	$\frac{1}{3}$	0	0	$\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0	0
5 7 1 3	0	0	0	0	0	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0
5 7 1 5	0	$-\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0
6 8 1 3	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$
7 5 1 3	0	0	0	0	0	0	-1	0	0	0
7 5 1 5	$\frac{1}{3}$	0	0	$\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0
7 7 1 3	0	0	0	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$
7 7 1 5	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0	0
8 4 1 5	0	$-\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0	0
8 6 1 3	0	0	0	0	0	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0
$Y = -1 \quad I = \frac{1}{2} \quad J = \frac{5}{2} \quad Y_4 = -\frac{5}{3}$										
$D_1 D_2 J_4 I_4$	12214	22214	32214	21114						
5 8 1 4	$\frac{2}{3}$	0	$\frac{1}{3}$	0						
7 8 1 4	0	0	0	1						
8 5 1 4	0	-1	0	0						
8 7 1 4	$-\frac{1}{3}$	0	$\frac{2}{3}$	0						

$Y = -1 \quad I = \frac{1}{2} \quad J = \frac{3}{2} \quad Y_4 = -\frac{2}{3}$															
$D_1 D_2 J_4 I_4$	12123	12223	12323	22123	22223	22323	24223	24323	32123	32223	32323	34223	34323	12225	
1 8 2 3	$\frac{1}{9}$	$-\frac{1}{6}$	$-\frac{1}{18}$	0	0	0	0	0	$\frac{1}{18}$	$-\frac{1}{12}$	$-\frac{1}{36}$	$-\frac{1}{4}$	$-\frac{1}{4}$	0	
2 7 2 3	$\frac{4}{9}$	0	$\frac{1}{18}$	0	0	0	0	0	$\frac{2}{9}$	0	$\frac{1}{36}$	0	$\frac{1}{4}$	0	
2 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3 6 2 3	$\frac{1}{9}$	$\frac{1}{6}$	$-\frac{1}{18}$	0	0	0	0	0	$\frac{1}{18}$	$\frac{1}{12}$	$-\frac{1}{36}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	
4 8 1 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4 8 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5 7 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5 7 1 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5 7 2 3	0	0	0	0	$\frac{1}{2}$	0	$\frac{1}{2}$	0	0	0	0	0	0	0	
5 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	
5 10 2 3	0	0	$\frac{1}{2}$	0	0	0	0	0	0	0	$\frac{1}{4}$	0	$-\frac{1}{4}$	0	
5 10 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6 3 2 3	0	0	0	$-\frac{1}{6}$	$-\frac{1}{4}$	$\frac{1}{12}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	
6 8 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6 8 2 3	$-\frac{1}{9}$	0	$-\frac{2}{9}$	0	0	0	0	0	$\frac{2}{9}$	0	$\frac{4}{9}$	0	0	0	
7 2 2 3	0	0	0	$-\frac{2}{3}$	0	$-\frac{1}{12}$	0	$\frac{1}{4}$	0	0	0	0	0	0	
7 2 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	
7 5 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 5 1 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 5 2 3	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	$\frac{1}{2}$	0	0	
7 5 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 7 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 7 1 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 7 2 3	$-\frac{2}{9}$	0	$\frac{1}{9}$	0	0	0	0	0	$\frac{4}{9}$	0	$-\frac{2}{9}$	0	0	0	
7 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 10 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 10 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{6}$	
8 1 2 3	0	0	0	$-\frac{1}{6}$	$\frac{1}{4}$	$\frac{1}{12}$	$-\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	
8 4 1 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8 4 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	
8 6 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8 9 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9 8 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	
10 5 2 3	0	0	0	0	0	$-\frac{3}{4}$	0	$-\frac{1}{4}$	0	0	0	0	0	0	
10 5 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10 7 2 3	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	$\frac{2}{3}$	0	0	0	0	
10 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

$D_1 D_2 J_4 I_4$	22225	24225	32225	34225	12215	22215	24415	32215	34415	12425	22425	24425	32425	34425
1 8 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 7 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 7 2 5	$\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0	0	0	0	0
3 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 8 1 5	0	0	0	0	$\frac{1}{3}$	0	0	$\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0	0
4 8 2 5	$\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$\frac{1}{4}$	0	0
5 7 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 7 1 5	0	0	0	0	0	$-\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0
5 7 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 7 2 5	0	0	$-\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	$\frac{1}{6}$	0	0	$\frac{1}{12}$	$-\frac{1}{4}$
5 10 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 10 2 5	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$	$-\frac{1}{2}$	0	0
6 3 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 8 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 8 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 2 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 2 2 5	0	0	$-\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0	0	0
7 5 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 5 1 5	0	0	0	0	$\frac{1}{3}$	0	0	$\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0
7 5 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 5 2 5	$\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	$-\frac{1}{4}$	$-\frac{1}{4}$	0	0
7 7 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 1 5	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0	0
7 7 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 10 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 10 2 5	0	0	$-\frac{1}{3}$	0	0	0	0	0	0	$\frac{1}{6}$	0	0	$-\frac{1}{3}$	0
8 1 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 4 1 5	0	0	0	0	0	$-\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0	0
8 4 2 5	0	0	$-\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$\frac{1}{4}$
8 6 1 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 9 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 8 2 5	0	0	$\frac{1}{3}$	0	0	0	0	0	0	$\frac{1}{6}$	0	0	$-\frac{1}{3}$	0
10 5 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 5 2 5	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$-\frac{1}{2}$
10 7 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	12213	22213	32213	21113	23313	21223	23223	21225	23225	23425				
1 8 2 3	0	0	0	0	0	0	0	0	0	0				
2 7 2 3	0	0	0	0	0	0	0	0	0	0				
2 7 2 5	0	0	0	0	0	0	0	0	0	0				
3 6 2 3	0	0	0	0	0	0	0	0	0	0				
4 8 1 5	0	0	0	0	0	0	0	0	0	0				
4 8 2 5	0	0	0	0	0	0	0	0	0	0				
5 7 1 3	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0	0	0	0	0	0				
5 7 1 5	0	0	0	0	0	0	0	0	0	0				
5 7 2 3	0	0	0	0	0	0	0	0	0	0				
5 7 2 5	0	0	0	0	0	0	0	0	0	0				
5 10 2 3	0	0	0	0	0	0	0	0	0	0				
5 10 2 5	0	0	0	0	0	0	0	0	0	0				
6 3 2 3	0	0	0	0	0	0	0	0	0	0				
6 8 1 3	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0	0	0	0	0				
6 8 2 3	0	0	0	0	0	0	0	0	0	0				
7 2 2 3	0	0	0	0	0	0	0	0	0	0				
7 2 2 5	0	0	0	0	0	0	0	0	0	0				
7 5 1 3	0	-1	0	0	0	0	0	0	0	0				
7 5 1 5	0	0	0	0	0	0	0	0	0	0				
7 5 2 3	0	0	0	0	0	0	0	0	0	0				
7 5 2 5	0	0	0	0	0	0	0	0	0	0				
7 7 1 3	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$	0	0	0	0	0				
7 7 1 5	0	0	0	0	0	0	0	0	0	0				
7 7 2 3	0	0	0	0	0	0	0	0	0	0				
7 7 2 5	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0	0				
7 10 2 3	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$	0	0	0				
7 10 2 5	0	0	0	0	0	0	0	0	0	0				
8 1 2 3	0	0	0	0	0	0	0	0	0	0				
8 4 1 5	0	0	0	0	0	0	0	0	0	0				
8 4 2 5	0	0	0	0	0	0	0	0	0	0				
8 6 1 3	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0	0	0	0	0	0				
8 6 2 3	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0	0	0				
8 9 2 5	0	0	0	0	0	0	$\frac{1}{3}$	$\frac{1}{6}$	$-\frac{1}{2}$	0				
9 8 2 5	0	0	0	0	0	0	0	0	0	0				
10 5 2 3	0	0	0	0	0	0	0	0	0	0				
10 5 2 5	0	0	0	0	0	0	0	0	0	0				
10 7 2 3	0	0	0	0	0	0	0	0	0	0				
10 7 2 5	0	0	0	0	0	0	$-\frac{1}{3}$	$-\frac{1}{6}$	$-\frac{1}{2}$	0				
$Y = -1 \quad I = \frac{1}{2} \quad J = \frac{3}{2} \quad Y_4 = -\frac{5}{3}$														
$D_1 D_2 J_4 I_4$	12124	12224	22124	22224	24224	32124	32224	34224	12214	22214	32214	21114	21224	23224
2 8 2 4	$\frac{1}{3}$	$-\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	0	0
3 7 2 4	$\frac{1}{3}$	$\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0
5 8 1 4	0	0	0	0	0	0	0	0	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0	0
5 8 2 4	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0
7 3 2 4	0	0	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0
7 8 1 4	0	0	0	0	0	0	0	0	0	0	0	1	0	0
7 8 2 4	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0
8 2 2 4	0	0	$-\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0
8 5 1 4	0	0	0	0	0	0	0	0	0	-1	0	0	0	0
8 5 2 4	0	$-\frac{1}{3}$	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0
8 7 1 4	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0	0
8 7 2 4	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	$\frac{1}{3}$
8 10 2 4	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
10 8 2 4	0	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0

$Y = -1 \quad I = \frac{1}{2} \quad J = \frac{1}{2} \quad Y_4 = -\frac{2}{3}$														
$D_1 D_2 J_4 I_4$	12123	12223	12323	22123	22223	22323	24223	24323	32123	32223	32323	34223	34323	12225
1 8 2 3	$\frac{1}{9}$	$-\frac{1}{6}$	$-\frac{1}{18}$	0	0	0	0	0	$\frac{1}{18}$	$-\frac{1}{12}$	$-\frac{1}{36}$	$-\frac{1}{4}$	$-\frac{1}{4}$	0
2 7 2 3	$\frac{4}{9}$	0	$\frac{1}{18}$	0	0	0	0	0	$\frac{2}{9}$	0	$\frac{1}{36}$	0	$\frac{1}{4}$	0
2 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 10 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 10 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 6 2 3	$\frac{1}{9}$	$\frac{1}{6}$	$-\frac{1}{18}$	0	0	0	0	0	$\frac{1}{18}$	$\frac{1}{12}$	$-\frac{1}{36}$	$\frac{1}{4}$	$-\frac{1}{4}$	0
3 9 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 8 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 8 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 7 2 3	0	0	0	0	$\frac{1}{2}$	0	$\frac{1}{2}$	0	0	0	0	0	0	0
5 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$
5 7 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 7 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 10 2 3	0	0	$\frac{1}{2}$	0	0	0	0	0	0	0	$\frac{1}{4}$	0	$-\frac{1}{4}$	0
5 10 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 3 2 3	0	0	0	$-\frac{1}{6}$	$-\frac{1}{4}$	$\frac{1}{12}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
6 8 2 3	$-\frac{1}{9}$	0	$-\frac{2}{9}$	0	0	0	0	0	$\frac{2}{9}$	0	$\frac{4}{9}$	0	0	0
6 8 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 2 2 3	0	0	0	$-\frac{2}{3}$	0	$-\frac{1}{12}$	0	$\frac{1}{4}$	0	0	0	0	0	0
7 2 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$
7 5 2 3	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	$\frac{1}{2}$	0	0
7 5 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 5 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 5 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 2 3	$-\frac{2}{9}$	0	$\frac{1}{9}$	0	0	0	0	0	$\frac{4}{9}$	0	$-\frac{2}{9}$	0	0	0
7 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 10 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 10 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{6}$
8 1 2 3	0	0	0	$-\frac{1}{6}$	$\frac{1}{4}$	$\frac{1}{12}$	$-\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
8 4 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$
8 4 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 6 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 9 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 3 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 8 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$
10 2 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 2 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 5 2 3	0	0	0	0	0	$-\frac{3}{4}$	0	$-\frac{1}{4}$	0	0	0	0	0	0
10 5 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 7 2 3	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	$\frac{2}{3}$	0	0	0	0
10 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 10 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 10 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	22225	24225	32225	34225	12233	22233	24233	32233	34233	12235	12435	22235	22435	24235
1 8 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 7 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 7 2 5	$\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0	0	0	0	0
2 10 3 3	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0
2 10 3 5	0	0	0	0	0	0	0	0	0	0	0	$\frac{3}{8}$	$-\frac{1}{8}$	$\frac{1}{8}$
3 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 9 3 5	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$\frac{1}{12}$	0	0	0
4 8 2 5	$\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0	0	0	0
4 8 3 5	0	0	0	0	0	0	0	0	0	$-\frac{1}{12}$	$\frac{1}{4}$	0	0	0
5 7 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 7 2 5	0	0	$-\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0	0
5 7 3 3	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0	0	0	0	0
5 7 3 5	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{8}$	$\frac{3}{8}$	$-\frac{3}{8}$
5 10 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 10 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 3 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 8 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 8 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 2 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 2 2 5	0	0	$-\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0	0	0	0	0	0	0
7 5 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 5 2 5	$\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0	0	0	0
7 5 3 3	0	0	0	0	0	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0	0	0	0	0
7 5 3 5	0	0	0	0	0	0	0	0	0	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0
7 7 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 3 5	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	0	0
7 10 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 10 2 5	0	0	$-\frac{1}{3}$	0	0	0	0	0	0	0	0	0	0	0
8 1 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 4 2 5	0	0	$-\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0	0
8 4 3 5	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{8}$	$-\frac{3}{8}$	$-\frac{3}{8}$
8 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 6 3 3	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	0	0	0	0
8 9 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 3 3 5	0	0	0	0	0	0	0	0	0	0	0	$-\frac{3}{8}$	$-\frac{1}{8}$	$-\frac{1}{8}$
9 8 2 5	0	0	$\frac{1}{3}$	0	0	0	0	0	0	0	0	0	0	0
10 2 3 3	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0
10 2 3 5	0	0	0	0	0	0	0	0	0	$-\frac{1}{4}$	$\frac{1}{12}$	0	0	0
10 5 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 5 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 7 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 10 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 10 3 5	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	0

$D_1 D_2 J_4 I_4$	24435	32235	32435	34235	34435	12425	22425	24425	32425	34425	21223	23223	21333	23133
1 8 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 7 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 10 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 10 3 5	$\frac{3}{8}$	0	0	0	0	0	0	0	0	0	0	0	0	0
3 6 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 9 3 5	0	$\frac{1}{8}$	$\frac{1}{24}$	$-\frac{1}{8}$	$\frac{3}{8}$	0	0	0	0	0	0	0	0	0
4 8 2 5	0	0	0	0	0	0	$\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0
4 8 3 5	0	$-\frac{1}{24}$	$\frac{1}{8}$	$-\frac{3}{8}$	$-\frac{1}{8}$	0	0	0	0	0	0	0	0	0
5 7 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 7 2 5	0	0	0	0	0	$\frac{1}{6}$	0	0	$\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0
5 7 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 7 3 5	$\frac{1}{8}$	0	0	0	0	0	0	0	0	0	0	0	0	0
5 10 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 10 2 5	0	0	0	0	0	0	$\frac{1}{2}$	$-\frac{1}{2}$	0	0	0	0	0	0
6 3 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 8 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 8 3 3	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{1}{3}$
7 2 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 2 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 5 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 5 2 5	0	0	0	0	0	0	$-\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0
7 5 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 5 3 5	0	$-\frac{1}{24}$	$-\frac{1}{8}$	$-\frac{3}{8}$	$\frac{1}{8}$	0	0	0	0	0	0	0	0	0
7 7 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 7 3 3	0	0	0	0	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	$-\frac{2}{3}$
7 7 3 5	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0	0	0
7 10 2 3	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$	0	0
7 10 2 5	0	0	0	0	0	$\frac{1}{6}$	0	0	$-\frac{1}{3}$	0	0	0	0	0
8 1 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 4 2 5	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0
8 4 3 5	$-\frac{1}{8}$	0	0	0	0	0	0	0	0	0	0	0	0	0
8 6 2 3	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$	0	0
8 6 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 9 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 3 3 5	$\frac{3}{8}$	0	0	0	0	0	0	0	0	0	0	0	0	0
9 8 2 5	0	0	0	0	0	$\frac{1}{6}$	0	0	$-\frac{1}{3}$	0	0	0	0	0
10 2 3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 2 3 5	0	$-\frac{1}{8}$	$\frac{1}{24}$	$\frac{1}{8}$	$\frac{3}{8}$	0	0	0	0	0	0	0	0	0
10 5 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 5 2 5	0	0	0	0	0	$-\frac{1}{3}$	0	0	$-\frac{1}{6}$	$-\frac{1}{2}$	0	0	0	0
10 7 2 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 7 2 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 10 3 3	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{2}$	0
10 10 3 5	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	0	0	0

$D_1 D_2 J_4 I_4$	23333	21225	23225	23425
1 8 2 3	0	0	0	0
2 7 2 3	0	0	0	0
2 7 2 5	0	0	0	0
2 10 3 3	0	0	0	0
2 10 3 5	0	0	0	0
3 6 2 3	0	0	0	0
3 9 3 5	0	0	0	0
4 8 2 5	0	0	0	0
4 8 3 5	0	0	0	0
5 7 2 3	0	0	0	0
5 7 2 5	0	0	0	0
5 7 3 3	0	0	0	0
5 7 3 5	0	0	0	0
5 10 2 3	0	0	0	0
5 10 2 5	0	0	0	0
6 3 2 3	0	0	0	0
6 8 2 3	0	0	0	0
6 8 3 3	$-\frac{1}{3}$	0	0	0
7 2 2 3	0	0	0	0
7 2 2 5	0	0	0	0
7 5 2 3	0	0	0	0
7 5 2 5	0	0	0	0
7 5 3 3	0	0	0	0
7 5 3 5	0	0	0	0
7 7 2 3	0	0	0	0
7 7 2 5	0	$\frac{1}{3}$	$-\frac{2}{3}$	0
7 7 3 3	$\frac{1}{6}$	0	0	0
7 7 3 5	0	0	0	0
7 10 2 3	0	0	0	0
7 10 2 5	0	0	0	0
8 1 2 3	0	0	0	0
8 4 2 5	0	0	0	0
8 4 3 5	0	0	0	0
8 6 2 3	0	0	0	0
8 6 3 3	0	0	0	0
8 9 2 5	0	$\frac{1}{3}$	$\frac{1}{6}$	$-\frac{1}{2}$
9 3 3 5	0	0	0	0
9 8 2 5	0	0	0	0
10 2 3 3	0	0	0	0
10 2 3 5	0	0	0	0
10 5 2 3	0	0	0	0
10 5 2 5	0	0	0	0
10 7 2 3	0	0	0	0
10 7 2 5	0	$-\frac{1}{3}$	$-\frac{1}{6}$	$-\frac{1}{2}$
10 10 3 3	$\frac{1}{2}$	0	0	0
10 10 3 5	0	0	0	0

$Y = -1 \quad I = \frac{1}{2} \quad J = \frac{1}{2} \quad Y_4 = -\frac{5}{3}$														
$D_1 D_2 J_4 I_4$	12124	12224	22124	22224	24224	32124	32224	34224	12234	22234	24234	32234	34234	21224
2 8 2 4	$\frac{1}{3}$	$-\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	0	0
3 7 2 4	$\frac{1}{3}$	$\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0
3 10 3 4	0	0	0	0	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0
5 8 2 4	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0
5 8 3 4	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0
7 3 2 4	0	0	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0
7 8 2 4	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0
7 8 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 2 2 4	0	0	$-\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0
8 5 2 4	0	$-\frac{1}{3}$	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0
8 5 3 4	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0
8 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$
8 7 3 4	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0
8 10 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$
10 3 3 4	0	0	0	0	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0
10 8 2 4	0	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0
$D_1 D_2 J_4 I_4$	23224	23134												
2 8 2 4	0	0												
3 7 2 4	0	0												
3 10 3 4	0	0												
5 8 2 4	0	0												
5 8 3 4	0	0												
7 3 2 4	0	0												
7 8 2 4	0	0												
7 8 3 4	0	-1												
8 2 2 4	0	0												
8 5 2 4	0	0												
8 5 3 4	0	0												
8 7 2 4	$-\frac{2}{3}$	0												
8 7 3 4	0	0												
8 10 2 4	$\frac{1}{3}$	0												
10 3 3 4	0	0												
10 8 2 4	0	0												
$Y = -2 \quad I = 1 \quad J = \frac{5}{2} \quad Y_4 = -\frac{5}{3}$														
$D_1 D_2 J_4 I_4$	12214	22214	32214	21114										
5 8 1 4	$\frac{2}{3}$	0	$\frac{1}{3}$	0										
7 8 1 4	0	0	0	1										
8 5 1 4	0	-1	0	0										
8 7 1 4	$-\frac{1}{3}$	0	$\frac{2}{3}$	0										
$Y = -2 \quad I = 1 \quad J = \frac{3}{2} \quad Y_4 = -\frac{5}{3}$														
$D_1 D_2 J_4 I_4$	12124	12224	22124	22224	24224	32124	32224	34224	12214	22214	32214	21114	21224	23224
2 8 2 4	$\frac{1}{3}$	$-\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	0	0
3 7 2 4	$\frac{1}{3}$	$\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0
5 8 1 4	0	0	0	0	0	0	0	0	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0	0
5 8 2 4	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0
7 3 2 4	0	0	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0
7 8 1 4	0	0	0	0	0	0	0	0	0	0	0	1	0	0
7 8 2 4	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0
8 2 2 4	0	0	$-\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0
8 5 1 4	0	0	0	0	0	0	0	0	0	-1	0	0	0	0
8 5 2 4	0	$-\frac{1}{3}$	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0
8 7 1 4	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0	0
8 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$
8 10 2 4	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$
10 8 2 4	0	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0

$Y = -2 \quad I = 1 \quad J = \frac{1}{2} \quad Y_4 = -\frac{5}{3}$														
$D_1 D_2 J_4 I_4$	12124	12224	22124	22224	24224	32124	32224	34224	12234	22234	24234	32234	34234	21224
2 8 2 4	$\frac{1}{3}$	$-\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	0	0
3 7 2 4	$\frac{1}{3}$	$\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0
3 10 3 4	0	0	0	0	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0
5 8 2 4	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0
5 8 3 4	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0
7 3 2 4	0	0	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0
7 8 2 4	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0
7 8 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 2 2 4	0	0	$-\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0
8 5 2 4	0	$-\frac{1}{3}$	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0
8 5 3 4	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0
8 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$
8 7 3 4	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0
8 10 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$
10 3 3 4	0	0	0	0	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0
10 8 2 4	0	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0
$D_1 D_2 J_4 I_4$	23224	23134												
2 8 2 4	0	0												
3 7 2 4	0	0												
3 10 3 4	0	0												
5 8 2 4	0	0												
5 8 3 4	0	0												
7 3 2 4	0	0												
7 8 2 4	0	0												
7 8 3 4	0	-1												
8 2 2 4	0	0												
8 5 2 4	0	0												
8 5 3 4	0	0												
8 7 2 4	$-\frac{2}{3}$	0												
8 7 3 4	0	0												
8 10 2 4	$\frac{1}{3}$	0												
10 3 3 4	0	0												
10 8 2 4	0	0												
$Y = -2 \quad I = 0 \quad J = \frac{5}{2} \quad Y_4 = -\frac{5}{3}$														
$D_1 D_2 J_4 I_4$	12214	22214	32214	21114										
5 8 1 4	$\frac{2}{3}$	0	$\frac{1}{3}$	0										
7 8 1 4	0	0	0	1										
8 5 1 4	0	-1	0	0										
8 7 1 4	$-\frac{1}{3}$	0	$\frac{2}{3}$	0										
$Y = -2 \quad I = 0 \quad J = \frac{5}{2} \quad Y_4 = -\frac{8}{3}$														
$D_1 D_2 J_4 I_4$	21115													
8 8 1 5	1													
$Y = -2 \quad I = 0 \quad J = \frac{3}{2} \quad Y_4 = -\frac{5}{3}$														
$D_1 D_2 J_4 I_4$	12124	12224	22124	22224	24224	32124	32224	34224	12214	22214	32214	21114	21224	23224
2 8 2 4	$\frac{1}{3}$	$-\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	0	0
3 7 2 4	$\frac{1}{3}$	$\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0
5 8 1 4	0	0	0	0	0	0	0	0	$\frac{2}{3}$	0	$\frac{1}{3}$	0	0	0
5 8 2 4	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0
7 3 2 4	0	0	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0
7 8 1 4	0	0	0	0	0	0	0	0	0	0	0	1	0	0
7 8 2 4	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0
8 2 2 4	0	0	$-\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0
8 5 1 4	0	0	0	0	0	0	0	0	0	-1	0	0	0	0
8 5 2 4	0	$-\frac{1}{3}$	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0
8 7 1 4	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	$\frac{2}{3}$	0	0	0
8 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	$-\frac{2}{3}$
8 10 2 4	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$	$\frac{1}{3}$
10 8 2 4	0	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0

$Y = -2 \quad I = 0 \quad J = \frac{3}{2} \quad Y_4 = -\frac{8}{3}$				
$D_1 D_2 J_4 I_4$	12125	22125	32125	21115
3 8 2 5	$\frac{2}{3}$	0	$\frac{1}{3}$	0
8 3 2 5	0	-1	0	0
8 8 1 5	0	0	0	1
8 8 2 5	$-\frac{1}{3}$	0	$\frac{2}{3}$	0

$Y = -2 \quad I = 0 \quad J = \frac{1}{2} \quad Y_4 = -\frac{5}{3}$															
$D_1 D_2 J_4 I_4$	12124	12224	22124	22224	24224	32124	32224	34224	12234	22234	24234	32234	34234	21224	
2 8 2 4	$\frac{1}{3}$	$-\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$-\frac{1}{12}$	$-\frac{1}{4}$	0	0	0	0	0	0	
3 7 2 4	$\frac{1}{3}$	$\frac{1}{6}$	0	0	0	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$	0	0	0	0	0	0	
3 10 3 4	0	0	0	0	0	0	0	0	$\frac{1}{2}$	0	0	$\frac{1}{4}$	$-\frac{1}{4}$	0	
5 8 2 4	0	0	0	$\frac{1}{2}$	$\frac{1}{2}$	0	0	0	0	0	0	0	0	0	
5 8 3 4	0	0	0	0	0	0	0	0	$-\frac{1}{6}$	0	0	$-\frac{1}{12}$	$-\frac{3}{4}$	0	
7 3 2 4	0	0	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	0	0	0	0	0	0	0	0	0	
7 8 2 4	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	0	
7 8 3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8 2 2 4	0	0	$-\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$	0	0	0	0	0	0	0	0	0	
8 5 2 4	0	$-\frac{1}{3}$	0	0	0	0	$-\frac{1}{6}$	$\frac{1}{2}$	0	0	0	0	0	0	
8 5 3 4	0	0	0	0	0	0	0	0	0	$\frac{1}{4}$	$-\frac{3}{4}$	0	0	0	
8 7 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{1}{3}$	
8 7 3 4	0	0	0	0	0	0	0	0	$-\frac{1}{3}$	0	0	$\frac{2}{3}$	0	0	
8 10 2 4	0	0	0	0	0	0	0	0	0	0	0	0	0	$\frac{2}{3}$	
10 3 3 4	0	0	0	0	0	0	0	0	0	$-\frac{3}{4}$	$-\frac{1}{4}$	0	0	0	
10 8 2 4	0	$-\frac{1}{3}$	0	0	0	0	$\frac{2}{3}$	0	0	0	0	0	0	0	

$D_1 D_2 J_4 I_4$	23224	23134
2 8 2 4	0	0
3 7 2 4	0	0
3 10 3 4	0	0
5 8 2 4	0	0
5 8 3 4	0	0
7 3 2 4	0	0
7 8 2 4	0	0
7 8 3 4	0	-1
8 2 2 4	0	0
8 5 2 4	0	0
8 5 3 4	0	0
8 7 2 4	$-\frac{2}{3}$	0
8 7 3 4	0	0
8 10 2 4	$\frac{1}{3}$	0
10 3 3 4	0	0
10 8 2 4	0	0

$Y = -2 \quad I = 0 \quad J = \frac{1}{2} \quad Y_4 = -\frac{8}{3}$				
$D_1 D_2 J_4 I_4$	12125	22125	32125	23135
3 8 2 5	$\frac{2}{3}$	0	$\frac{1}{3}$	0
8 3 2 5	0	-1	0	0
8 8 2 5	$-\frac{1}{3}$	0	$\frac{2}{3}$	0
8 8 3 5	0	0	0	-1

$Y = -3 \quad I = \frac{1}{2} \quad J = \frac{5}{2} \quad Y_4 = -\frac{8}{3}$				
$D_1 D_2 J_4 I_4$	21115			
8 8 1 5	1			

$Y = -3 \quad I = \frac{1}{2} \quad J = \frac{3}{2} \quad Y_4 = -\frac{8}{3}$				
$D_1 D_2 J_4 I_4$	12125	22125	32125	21115
3 8 2 5	$\frac{2}{3}$	0	$\frac{1}{3}$	0
8 3 2 5	0	-1	0	0
8 8 1 5	0	0	0	1
8 8 2 5	$-\frac{1}{3}$	0	$\frac{2}{3}$	0

$Y = -3$	$I = \frac{1}{2}$	$J = \frac{1}{2}$	$Y_4 = -\frac{8}{3}$
$D_1 D_2 J_4 I_4$	12125	22125	32125 23135
3 8 2 5	$\frac{2}{3}$	0	$\frac{1}{3}$ 0
8 3 2 5	0	-1	0 0
8 8 2 5	$-\frac{1}{3}$	0	$\frac{2}{3}$ 0
8 8 3 5	0	0	0 -1

Table A2. The index of diquark cluster

	$[\nu_2]$	$[c_2]$	$[f_2]$	$[\sigma_2]$	Y_2	I_2
1	[2]	[2]	[2]	[11]	2/3	1
2	[2]	[2]	[2]	[11]	-1/3	1/2
3	[2]	[2]	[2]	[11]	-4/3	0
4	[2]	[2]	[11]	[2]	2/3	0
5	[2]	[2]	[11]	[2]	-1/3	1/2
6	[2]	[11]	[2]	[2]	2/3	1
7	[2]	[11]	[2]	[2]	-1/3	1/2
8	[2]	[11]	[2]	[2]	-4/3	0
9	[2]	[11]	[11]	[11]	2/3	0
10	[2]	[11]	[11]	[11]	-1/3	1/2

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